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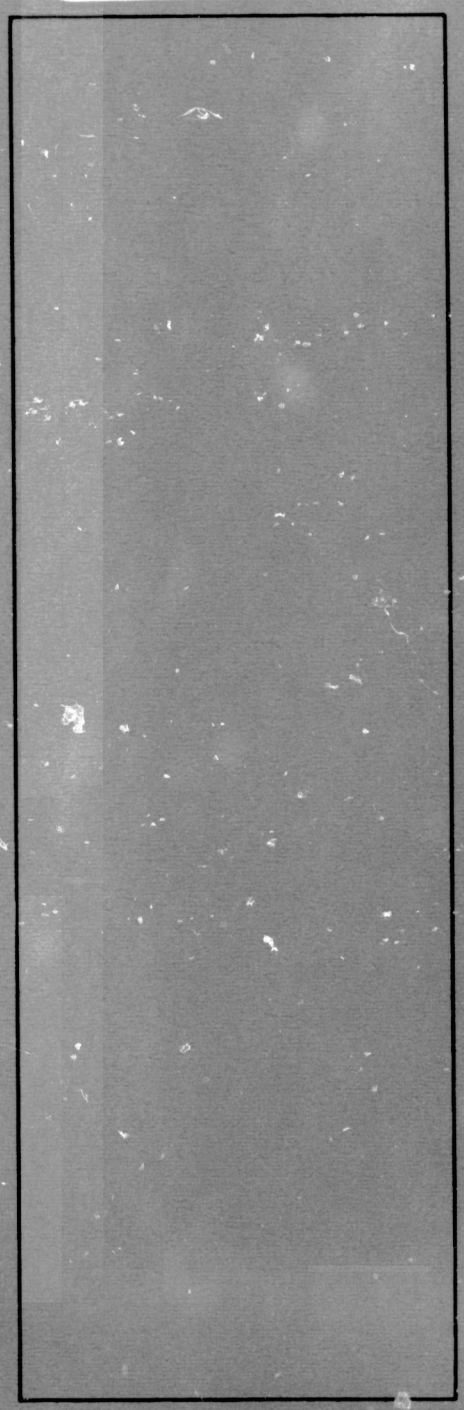
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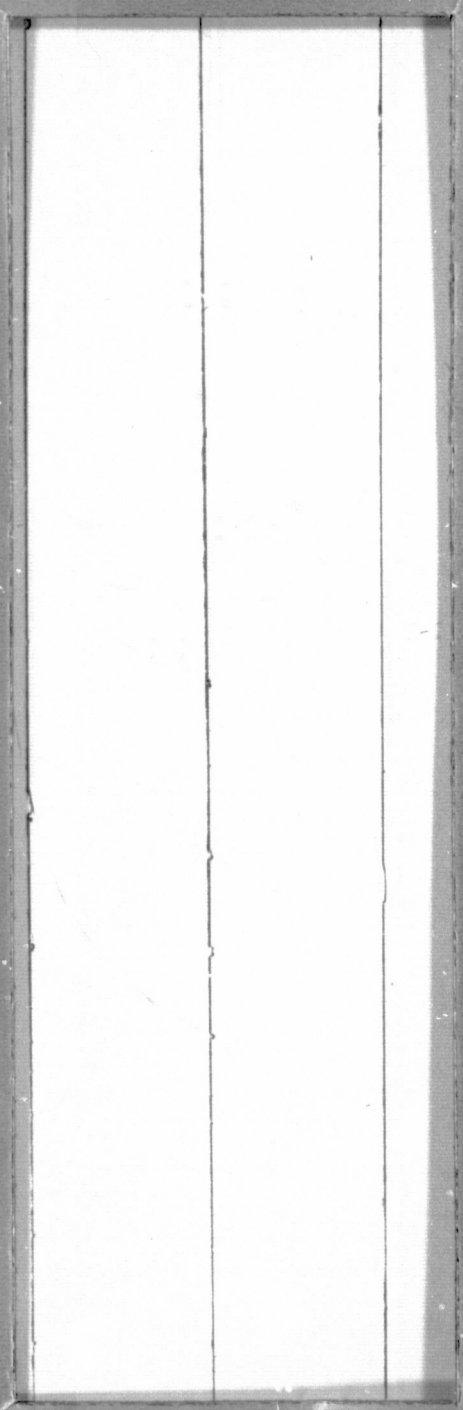
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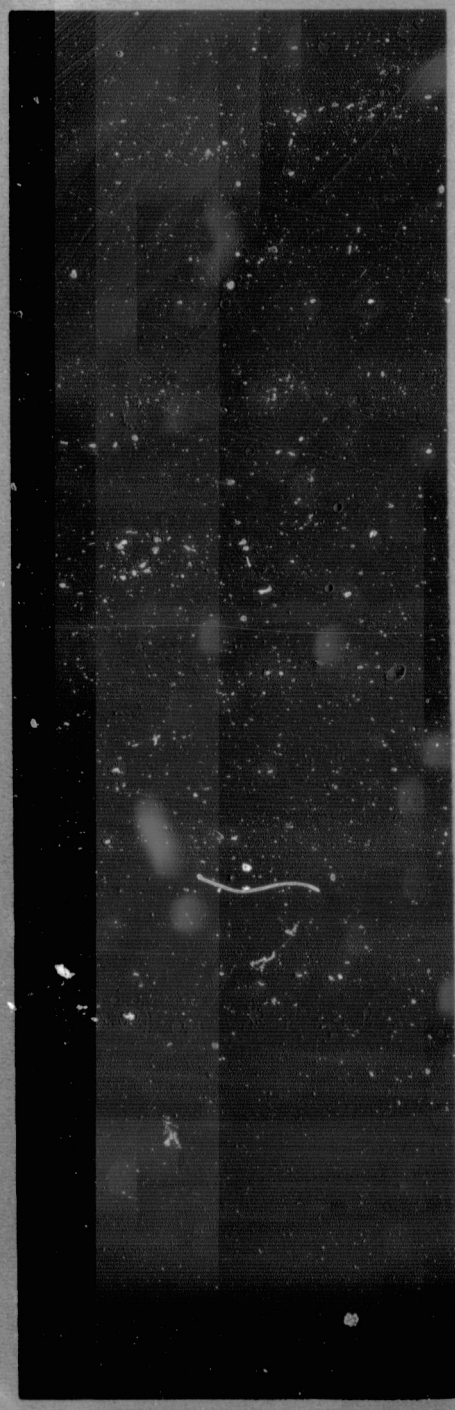
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Bendix

Guidance Systems
Division

THE
BENDIX
CORPORATION

GUIDANCE SYSTEMS
DIVISION

ANALYTICAL STUDY OF INSIDE-OUT GIMBAL DYNAMICS

FINAL REPORT
VOLUME II
APPENDIX

ANALYTICAL STUDY OF
INSIDE-OUT/COINCIDENT
GIMBAL DYNAMICS

SEPTEMBER 1976

CONTRACT NAS8-31629

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FOREWORD

This appendix is submitted in support of Volume I of the Final Report, in accordance with the requirements of Contract No. NAS8-31629, "Analytical Study of Inside-Out Gimbal Dynamics."

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1. INTRODUCTION

This volume will contain the eigenvalue data that was obtained upon which the results of the stability analyses outlined in section 3 of the final report are based. Unless otherwise specified, all of the stability data was obtained for the Inside-Out Gimbal (IOG) system configuration. However, due to the similarity between the IOG and the Coincident Gimbal system configurations, the data essentially applies to both. In addition, this volume will contain IPS earth point tracking time histories at various orbital altitudes that were not included in the main body of the final report. Unless otherwise specified, this data was obtained for the Coincident Gimbal System configuration.

Table 1-1 defines the nomenclature used for the input parameters in the eigenvalue algorithm. This nomenclature is the same for all of the eigenvalue runs. A full parameter listing precedes groups of eigenvalue runs which apply to the first set of eigenvalues immediately following the listing. The parameters that were modified from the run immediately following the full parameter listing are listed below or immediately after the eigenvalue printout and applies to the following set of eigenvalues. The parameter changes that apply to the third set of eigenvalues following the complete parameter listing are printed below or immediately after the second set of eigenvalues. The same procedure is followed until the next complete parameter listing is reached where the procedure outlined above is repeated. In some cases there will be two or more values for the same parameters in the full listing. The parameter values that are actually employed in the eigenvalue determination are the last set of values for a particular set of parameters in the listing.

Table 1-1. Definition of Computer Printout Nomenclature

M1,M2,M3 = m_1, m_2, m_3	=	Mass of bodies 1, 2, and 3 respectively
J1X,J1Y,J1Z = J_{1x}, J_{1y}, J_{1z}	=	Inertia of body 1 (i.e., orbiter) about the x, y, and z axes respectively
J2X,J2Y,J2Z = J_{2x}, J_{2y}, J_{2z}	=	Inertia of body 2 (i.e., IPS pedestal) about the x, y, and z axes respectively
J3X,J3Y,J3Z = J_{3x}, J_{3y}, J_{3z}	=	Inertia of body 3 (i.e., telescope) about the x, y, and z axes respectively
SR1X,SR1Y,SR1Z = r_{1x}, r_{1y}, r_{1z}	=	x, y, and z components of vector distance from pedestal CM to gimbal hinge point
SR2X,SR2Y,SR2Z = r_{2x}, r_{2y}, r_{2z}	=	x, y, and z components of vector distance from gimbal hinge point to telescope CM
AIJ = a_{ij}	=	Coefficients of direction cosine matrix defining the transformation from body 3 to body 2 coordinates
R120X,R120Y,R120z = R_{120x}, R_{120y}, R_{120z}	=	x, y, and z components of inertial vector describing the distance between the shuttle and pedestal center of masses when isolators are in an unstressed state and system is inertially fixed
RE20X,RE20Y,RE20Z = R_{E20x}, R_{E20y}, R_{E20z}	=	x, y, and z components of inertial vector defining the distance between the pedestal CM and the suspension center of elasticity
CDX,CDY,CDZ = D_x, D_y, D_z	=	Suspension linear damping coefficients along the x, y, and z axes respectively
SDX,SDY,SDZ = d_x, d_y, d_z	=	Suspension rotational damping coefficients about the x, y, and z axes respectively
CKX,CKY,CKZ = K_x, K_y, K_z	=	Suspension linear stiffness along the x, y, and z axes respectively
SKX,SKY,SKZ = k_x, k_y, k_z	=	Suspension rotational stiffness about the x, y, and z axes respectively
OMGNT = ω_{nt}	=	Gimbal torquer first order break frequency
OMGNS = ω_{ns}	=	Rate gyro natural frequency
ZETAS = ζ_s	=	Rate gyro damping ratio

Table 1-1. Definition of Computer Printout Nomenclature (Concluded)

CKRX,CKRY,CKRZ = K_{Rx}, K_{Ry}, K_{Rz}	=	Rate gain about the x, y, and z axes respectively
CKPX,CKPY,CKPZ = K_{px}, K_{py}, K_{pz}	=	Position gain about the x, y, and z axes respectively
CKIX,CKIY,CKIZ = K_{Ix}, K_{Iy}, K_{Iz}	=	Integral gain about the x, y, and z axes respectively

Symbols given after computer nomenclature correspond to those used for the same parameters in the model derivation outlined in section 2.0 of the main report.

2. SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

The data that follows shows the IPS eigenvalue dependance as a function of pointing control loop bandwidth variation for telescope look angles of 0, 10, 20, 40, 60, and 90 degrees. All other system parameters remained constant.

2. SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

The data that follows shows the IPS eigenvalue dependance as a function of pointing control loop bandwidth variation for telescope look angles of 0, 10, 20, 40, 60, and 90 degrees. All other system parameters remained constant.

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2901000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1686999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214003E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7556000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

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CD 20	CKIX 0.1240400E 06	CKIY 0.1105009E 06	CKIZ 0.1304000E 06
CD 18	CKRX 0.0000000E 00	CKRY 0.0000000E 00	CKRZ 0.0000000E 00
CD 19	CKPX 0.0000000E 00	CKPY 0.0000000E 00	CKPZ 0.0000000E 00
CD 20	CKIX 0.0000000E 00	CKIY 0.0000000E 00	CKIZ 0.0000000E 00

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********** EIGENVALUES **********

147

NUMBER	REAL	IMAG
1	0.00000000D 00	0.00000000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.97442040 00	0.17651940 01
11	-0.97442040 00	-0.17651940 01
12	-0.13904080-01	0.24059720 00
13	-0.13904080-01	-0.24059720 00
14	-0.43000700-01	0.42134290 00
15	-0.43000700-01	-0.42134290 00
16	-0.97476640 00	0.17654110 01
17	-0.97476640 00	-0.17654110 01
18	-0.14711830-01	0.24746320 00
19	-0.14711830-01	-0.24746320 00
20	-0.29920000 00	0.10772550 01
21	-0.29920000 00	-0.10772550 01
22	-0.81700020 02	0.14150850 03
23	-0.81700020 02	-0.14150850 03
24	-0.12570010 03	0.00000000 00
25	-0.81700020 02	0.14150850 03
26	-0.81700020 02	-0.14150850 03
27	-0.12570010 03	0.00000000 00
28	-0.81700020 02	0.14150850 03
29	-0.81700020 02	-0.14150850 03
30	-0.12570010 03	0.00000000 00

CD	A11	A12	A13
8	0.98480800E 00	0.00000000E 00	0.17364800E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.17364800E 00	0.00000000E 00	0.98480800E 00

********** EIGENVALUES **********

148

NUMBER	REAL	IMAG
1	0.00000000D 00	0.00000000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.97447D4D 00	0.17[illegible]D 01
11	-0.97442D4D 00	-0.17[illegible]D 01
12	-0.13904D8D-01	0.24[illegible]D 00
13	-0.13904D8D-01	-0.24[illegible]D 00
14	-0.46893D2D-01	0.41[illegible]D 00
15	-0.46893D2D-01	-0.41[illegible]D 00
16	-0.13468D7D-01	0.23[illegible]D 00
17	-0.13468D7D-01	-0.23[illegible]D 00
18	-0.97464D2D 00	0.17[illegible]D 01
19	-0.97464D2D 00	-0.17[illegible]D 01
20	-0.29920D0D 00	0.10772[illegible]D 01
21	-0.29920D0D 00	-0.10772[illegible]D 01
22	-0.81700D2D 02	0.14150[illegible]D 03
23	-0.81700D2D 02	-0.14150[illegible]D 03
24	-0.12570D1D 03	0.00000000D 00
25	-0.81700D2D 02	0.14150[illegible]D 03
26	-0.81700D2D 02	-0.14150[illegible]D 03
27	-0.12570D1D 03	0.00000000D 00
28	-0.81700D2D 02	0.14150[illegible]D 03
29	-0.81700D2D 02	-0.14150[illegible]D 03
30	-0.12570D1D 03	0.00000000D 00

CD	A11	A12	A13
8	0.93969E0E 00	0.00200D0E 00	0.34202D0E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.34202D0E 00	0.00000000E 00	0.93969E0E 00

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********** EIGENVALUES **********

149

NUMBER	REAL	IMAG
1	0.30000000D 00	0.00000000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.97442040D 00	0.17651941D 01
11	-0.97442040D 00	-0.17651941D 01
12	-0.13904080D-01	0.24059720D 00
13	-0.13904080D-01	-0.24059720D 00
14	-0.56892100D-01	0.48364710D 00
15	-0.56892100D-01	-0.48364710D 00
16	-0.11049440D-01	0.21454840D 00
17	-0.11049440D-01	-0.21454840D 00
18	-0.97427450D 00	0.17651920D 01
19	-0.97427450D 00	-0.17651920D 01
20	-0.29920000D 00	0.10772550D 01
21	-0.29920000D 00	-0.10772550D 01
22	-0.81700020D 02	0.14150850D 03
23	-0.81700020D 02	-0.14150850D 03
24	-0.12570010D 03	0.00000000D 00
25	-0.81700020D 02	0.14150850D 03
26	-0.81700020D 02	-0.14150850D 03
27	-0.12570010D 03	0.00000000D 00
28	-0.81700020D 02	0.14150850D 03
29	-0.81700020D 02	-0.14150850D 03
30	-0.12570010D 03	0.00000000D 00

CD	A11	A12	A13
8	0.7660440E 00	0.00000000E 00	0.64278880E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.64278880E 00	0.00000000E 00	0.76604440E 00

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150 ********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	0.00000000D 00	0.00000000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.97442040D 00	0.17651940D 01
11	-0.97442040D 00	-0.17651940D 01
12	-0.13904080D-01	0.24059720D 00
13	-0.13904080D-01	-0.24059720D 00
14	-0.86091250D-01	0.59107750D 00
15	-0.88891250D-01	-0.59107750D 00
16	-0.71873830-02	0.17311950D 00
17	-0.71873830-02	-0.17311950D 00
18	-0.97301040D 00	0.17643070D 01
19	-0.97301040D 00	-0.17643070D 01
20	-0.29920000D 00	0.10772550D 01
21	-0.29920000D 00	-0.10772550D 01
22	-0.81700020D 02	0.14150850D 03
23	-0.81700020D 02	-0.14150850D 03
24	-0.12570010D 03	0.00000000D 00
25	-0.81700020D 02	0.14150850D 03
26	-0.81700020D 02	-0.14150850D 03
27	-0.12570010D 03	0.00000000D 00
28	-0.81700020D 02	0.14150850D 03
29	-0.81700020D 02	-0.14150850D 03
30	-0.12570010D 03	0.00000000D 00

CD	A11	A12	A13
8	0.50000000E 00	0.00000000E 00	0.86602500E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.86602500E 00	0.00000000E 00	0.50000000E 00

********** EIGENVALUES **********

151

NUMBER	REAL	IMAG
1	0.00000000D 00	0.00000000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.97442040D 00	0.17651940D 01
11	-0.97442040D 00	-0.17651940D 01
12	-0.13904080D-01	0.24059720D 00
13	-0.13904080D-01	-0.24059720D 00
14	-0.11590700D 00	0.68562790D 00
15	-0.11590700D 00	-0.68562790D 00
16	-0.52454910-02	0.14792950D 00
17	-0.52454910-02	-0.14792950D 00
18	-0.97153330 00	0.17633770 01
19	-0.97153330 00	-0.17633770 01
20	-0.23920000D 00	0.10772550 01
21	-0.23920000D 00	-0.10772550 01
22	-0.81700020 02	0.14150850 03
23	-0.81700020 02	-0.14150850 03
24	-0.12570010 03	0.00000000 00
25	-0.81700020 02	0.14150850 03
26	-0.81700020 02	-0.14150850 03
27	-0.12570010 03	0.00000000 00
28	-0.81700020 02	0.14150850 03
29	-0.81700020 02	-0.14150850 03
30	-0.12570010 03	0.00000000 00

CD	A11	A12	A13
8	0.00000000E 00	0.00000002E 00	0.10000002E 01

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.10000000E 01	0.00000000E 00	0.00000000E 00

********** EIGENVALUES **********

152

NUMBER	REAL	IMAG
1	0.00000000D 00	0.62360000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.17442040 00	0.17551940 01
11	-0.17442040 00	-0.17551940 01
12	-0.13924300-01	0.24059720 00
13	-0.13904080-01	-0.24059720 00
14	-0.13684350 00	0.74104350 00
15	-0.13684350 00	-0.74104350 00
16	-0.97041690 00	0.17626720 01
17	-0.97041690 00	-0.17626720 01
18	-0.43012820-02	0.12629020 00
19	-0.43012820-02	-0.12629020 00
20	-0.29923000 00	0.13772550 01
21	-0.29923000 00	-0.13772550 01
22	-0.81700320 02	0.14150850 03
23	-0.81700320 02	-0.14150850 03
24	-0.12570010 03	0.00000000 00
25	-0.91700020 02	0.14150850 03
26	-0.61700320 02	-0.14150850 03
27	-0.12570010 03	0.00000000 00
28	-0.61700020 02	0.14150850 03
29	-0.81700320 02	-0.14150850 03
30	-0.12570010 03	0.00000000 00

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***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1542000E 07	0.6944000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2903000E 04	0.2648000E 04	0.2605000E 04
5	SR1X	SR1Y	SR1Z
	0.0000009E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000003E 00	0.0000000E 00	0.1688999E 01
8	A11	A12	A13
	0.1020000E 01	0.0000200E 00	0.0000000E 00
9	A21	A22	A23
	0.0000000E 00	0.1000009E 01	0.0000000E 00
10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
11	R120X	R120Y	R120Z
	0.4150000E 01	0.0000000E 00	0.6731000E 00
12	RE20X	RE20Y	RE20Z
	0.0000000E 00	0.0000000E 00	-0.3750000E 00
13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
14	SDX	SDY	SDZ
	0.1496000E 02	0.1496000E 02	0.2992000E 02
15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
17	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000000E 00
18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

CD 20	CKIX 0.1240000E 06	CKIY 0.1105000E 06	CKIZ 0.1384000E 06
CD 18	CKPX 0.2214000E 04	CKPY 0.1973000E 04	CKPZ 0.2470000E 04
CD 19	CKPX 0.7855999E 03	CKPY 0.7030003E 03	CKPZ 0.8802999E 03
CD 20	CKIX 0.1240000E 03	CKIY 0.1105000E 03	CKIZ 0.1384000E 03

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********** EIGENVALUES **********

153

NUMBER	REAL	IMAG
1	-0.8189371D 02	0.1406789D 03
2	-0.8189371D 02	-0.1406789D 03
3	-0.1235643D 03	0.0000000D 00
4	-0.9228562D 00	0.1929774D 01
5	-0.9228562D 00	-0.1929774D 01
6	-0.2335998D-03	0.7841840D-01
7	-0.2335998D-03	-0.7841840D-01
8	-0.2186332D 00	0.1542981D 00
9	-0.2186332D 00	-0.1542981D 00
10	-0.1441617D 01	0.0000000D 00
11	-0.8188705D 02	0.1407069D 03
12	-0.8188705D 02	-0.1407069D 03
13	-0.1236373D 03	0.0000000D 00
14	-0.9199661D 00	0.1924154D 01
15	-0.9199661D 00	-0.1924154D 01
16	-0.1381135D 01	0.0000000D 00
17	-0.2221814D 00	0.1526532D 00
18	-0.2221814D 00	-0.1526532D 00
19	-0.1112496D-03	0.7835426D-01
20	-0.1112496D-03	-0.7835426D-01
21	-0.8180472D 02	0.1410533D 03
22	-0.8180472D 02	-0.1410533D 03
23	-0.1245344D 03	0.0000000D 00
24	-0.2369806D 00	0.2355855D 00
25	-0.2369806D 00	-0.2355855D 00
26	-0.4822726D 00	0.0000000D 00
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

154

NUMBER	REAL	IMAG
1	-0.8189187D 02	0.1406866D 03
2	-0.8189187D 02	-0.1406866D 03
3	-0.1235843D 03	0.0000000D 00
4	-0.9221635D 00	0.1927298D 01
5	-0.9221635D 00	-0.1927298D 01
6	-0.2269600D-03	0.7880214D-01
7	-0.2269600D-03	-0.7880214D-01
8	-0.2192331D 00	0.1542393D 00
9	-0.2192331D 00	-0.1542393D 00
10	-0.1425425D 01	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8180472D 02	0.1410533D 03
14	-0.8180472D 02	-0.1410533D 03
15	-0.1245244D 03	0.0000000D 00
16	-0.4822726D 00	0.0000000D 00
17	-0.2369806D 00	0.2355855D 00
18	-0.2369806D 00	-0.2355855D 00
19	-0.8188493D 02	0.1407157D 03
20	-0.8188493D 02	-0.1407157D 03
21	-0.1236683D 03	0.0000000D 00
22	-0.9193785D 00	0.1921873D 01
23	-0.9193785D 00	-0.1921873D 01
24	-0.1361019D 01	0.0000000D 00
25	-0.2254858D 03	0.1527886D 00
26	-0.2254858D 00	-0.1527886D 00
27	-0.1122222D-03	0.7874502D-01
28	-0.1122222D-03	-0.7874502D-01
29	-0.4450338D-01	0.4181458D 00
30	-0.4450338D-01	-0.4181458D 00

CD	A11	A12	A13
8	0.9306930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

155

NUMBER	REAL	IMAG
1	-0.8188643D 02	0.1407094D 03
2	-0.8188643D 02	-0.1407094D 03
3	-0.1236439D 03	0.0000000D 00
4	-0.9203088D 00	0.1919807D 01
5	-0.9203088D 00	-0.1919807D 01
6	-0.2057766D-03	0.7997563D-01
7	-0.2057766D-03	-0.7997563D-01
8	-0.2211268D 00	0.1543076D 00
9	-0.2211268D 00	-0.1543076D 00
10	-0.1376757D 01	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8180472D 02	0.1410533D 03
14	-0.8180472D 02	-0.1410533D 03
15	-0.1245344D 03	0.0000000D 00
16	-0.4822726D 00	0.0000000D 00
17	-0.2369806D 00	0.2355855D 00
18	-0.2369806D 00	-0.2355855D 00
19	-0.8187870D 02	0.1407416D 03
20	-0.8187870D 02	-0.1407416D 03
21	-0.1237276D 03	0.0000000D 00
22	-0.9177842D 00	0.1914968D 01
23	-0.9177842D 00	-0.1914968D 01
24	-0.1293304D 01	0.0000000D 00
25	-0.2365784D 00	0.1527483D 00
26	-0.2365784D 00	-0.1527483D 00
27	-0.1157729D-03	0.7993310D-01
28	-0.1157729D-03	-0.7993310D-01
29	-0.4861196D-01	0.4082882D 00
30	-0.4861196D-01	-0.4082882D 00

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

156

NUMBER	REAL	IMAG
1	-0.8100555D 02	0.1407972D 03
2	-0.8100555D 02	-0.1407972D 03
3	-0.1238722D 03	0.0000000D 00
4	-0.9163732D 00	0.1889302D 01
5	-0.9163732D 00	-0.1889302D 01
6	-0.9929164D-04	0.8502738D-01
7	-0.9929164D-04	-0.8502738D-01
8	-0.2304865D 00	0.1544421D 00
9	-0.2304865D 00	-0.1544421D 00
10	-0.1179455D 01	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8180472D 02	0.1410533D 03
14	-0.8180472D 02	-0.1410533D 03
15	-0.1245244D 01	0.0000000D 00
16	-0.4822726D 00	0.0000000D 00
17	-0.2369806D 00	0.2355855D 00
18	-0.2369806D 00	-0.2355855D 00
19	-0.8185580D 02	0.1408373D 03
20	-0.8185580D 02	-0.1408373D 03
21	-0.1239762D 03	0.0000000D 00
22	-0.9141851D 00	0.1886709D 01
23	-0.9141851D 00	-0.1886709D 01
24	-0.9782882D 00	0.0000000D 00
25	-0.3121022D 00	0.1306258D 00
26	-0.3121022D 00	-0.1306258D 00
27	-0.1430252D-03	0.8506974D-01
28	-0.1430252D-03	-0.8506974D-01
29	-0.5688150D-01	0.3663837D 00
30	-0.5688150D-01	-0.3663837D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

157

NUMBER	REAL	IMAG
1	-0.8183381D 02	0.1409312D 03
2	-0.8183381D 02	-0.1409312D 03
3	-0.1242196D 03	0.0000000D 00
4	-0.9224553D 00	0.1839874D 01
5	-0.9224553D 00	-0.1839874D 01
6	0.1794100D-03	0.9439163D-01
7	0.1794100D-03	-0.9439163D-01
8	-0.2584813D 00	0.1557741D 00
9	-0.2584813D 00	-0.1557741D 00
10	-0.8280620D 00	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8180472D 02	0.1410533D 03
14	-0.8180472D 02	-0.1410533D 03
15	-0.1245344D 03	0.0000000D 00
16	-0.4822726D 00	0.0000000D 00
17	-0.2369806D 00	0.2355855D 00
18	-0.2369806D 00	-0.2355855D 00
19	-0.8182341D 02	0.1409740D 03
20	-0.8182341D 02	-0.1409740D 03
21	-0.1243297D 03	0.0000000D 00
22	-0.9189096D 00	0.1839691D 01
23	-0.9189096D 00	-0.1839691D 01
24	-0.5737454D 00	0.4606983D 00
25	-0.5737454D 00	-0.4606983D 00
26	-0.2355755D 00	0.0000000D 00
27	-0.2852481D-03	0.9535584D-01
28	-0.2852481D-03	-0.9535584D-01
29	-0.4373162D-01	0.3092499D 00
30	-0.4373162D-01	-0.3092499D 00

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

158

NUMBER	REAL	IMAG
1	-0.8177496D 02	0.1411816D 03
2	-0.8177196D 02	-0.1411016D 03
3	-0.1248647D 03	0.0000000D 00
4	-0.9758819D 00	0.1764143D 01
5	-0.9758819D 00	-0.1764143D 01
6	-0.2407951D 00	0.3507796D 00
7	-0.2407951D 00	-0.3507796D 00
8	0.1479794D-02	0.1295335D 00
9	0.1479794D-02	-0.1295335D 00
10	-0.3317301D 00	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8180472D 02	0.1410533D 03
14	-0.8180472D 02	-0.1410533D 03
15	-0.1245244D 03	0.0000000D 00
16	-0.4822726D 00	0.0000000D 00
17	-0.2369806D 00	0.2355855D 00
18	-0.2369806D 00	-0.2355855D 00
19	-0.9704169D 00	0.1762672D 01
20	-0.9704169D 00	-0.1762672D 01
21	-0.4386283D-02	0.1352902D 00
22	-0.4386283D-02	-0.1352902D 00
23	-0.8176816D 02	0.1412100D 03
24	-0.8176816D 02	-0.1412100D 03
25	-0.1249370D 03	0.0000000D 00
26	-0.3620659D 00	0.7333890D 00
27	-0.3620659D 00	-0.7333890D 00
28	-0.1754146D 00	0.0000000D 00
29	-0.4539090D-03	0.2319843D 00
30	-0.4539090D-03	-0.2319843D 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.4542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2635000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	CKRX	CKRY	CKRZ
18	0.4428000E 04	0.3944000E 04	0.4940000E 04

CD	CKPX	CKPY	CKPZ
19	0.3142000E 04	0.2800000E 04	0.3506000E 04

CD	CKIX	CKIY	CKIZ
20	0.9920000E 03	0.8840000E 03	0.1107000E 04

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********** EIGENVALUES **********

159

NUMBER	REAL	IMAG
1	-0.8210202D 02	0.1398323D 03
2	-0.8210202D 02	-0.1398323D 03
3	-0.1213262D 03	0.0000000D 00
4	-0.1036686D 01	0.2018072D 01
5	-0.1036686D 01	-0.2018072D 01
6	-0.4062521D 00	0.3378498D 00
7	-0.4062521D 00	-0.3378498D 00
8	-0.1316539D-02	0.7899861D-01
9	-0.1316539D-02	-0.7899861D-01
10	-0.2657828D 01	0.0000000D 00
11	-0.8208780D 02	0.1398895D 03
12	-0.8208780D 02	-0.1398895D 03
13	-0.1214797D 03	0.0000000D 00
14	-0.2545593D 01	0.0000000D 00
15	-0.1028214D 01	0.2018882D 01
16	-0.1028214D 01	-0.2018882D 01
17	-0.4095449D 00	0.3384652D 00
18	-0.4095449D 00	-0.3384652D 00
19	-0.1298412D-02	0.7899603D-01
20	-0.1298412D-02	-0.7899603D-01
21	-0.8191436D 02	0.1405937D 03
22	-0.8191436D 02	-0.1405937D 03
23	-0.1233422D 03	0.0000000D 00
24	-0.9777311D 00	0.0000000D 00
25	-0.4757134D 00	0.4694318D 00
26	-0.4757134D 00	-0.4694318D 00
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

160

NUMBER	REAL	IMAG
1	-0.8204810D 02	0.1204840D 02
2	-0.8204810D 02	0.1204840D 02
3	-0.1013684D 03	0.0000000D 00
4	-0.2627468D 01	0.0000000D 00
5	-0.1033977D 01	0.2016927D 01
6	-0.1033977D 01	-0.2016927D 01
7	-0.4070459D 00	0.3382325D 00
8	-0.4070459D 00	-0.3382325D 00
9	-0.1328270D-02	0.7939613D-01
10	-0.1328270D-02	-0.7939613D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8208327D 02	0.1399075D 03
14	-0.8208327D 02	-0.1399075D 03
15	-0.1215280D 03	0.0000000D 00
16	-0.2511834D 01	0.0000000D 00
17	-0.1025586D 01	0.2017597D 01
18	-0.1025586D 01	-0.2017597D 01
19	-0.4125855D 00	0.3379124D 00
20	-0.4125955D 00	-0.3379124D 00
21	-0.1311341D-02	0.7939670D-01
22	-0.1311341D-02	-0.7939670D-01
23	-0.4238960D-01	0.4204558D 00
24	-0.4238960D-01	-0.4204558D 00
25	-0.8191436D 02	0.1405937D 03
26	-0.8191436D 02	-0.1405937D 03
27	-0.1233422D 03	0.0000000D 00
28	-0.9777311D 00	0.0000000D 00
29	-0.4757134D 00	0.4694318D 00
30	-0.4757134D 00	-0.4694318D 00

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

161

NUMBER	REAL	IMAG
1	-0.8208647D 02	0.1398947D 03
2	-0.8208647D 02	-0.1398947D 03
3	-0.1214935D 03	0.0000000D 00
4	-0.1025830D 01	0.2013120D 01
5	-0.1025830D 01	-0.2013120D 01
6	-0.2537475D 01	0.0000000D 00
7	-0.4092227D 00	0.3394444D 00
8	-0.4092227D 00	-0.3394444D 00
9	-0.1364401D-02	0.8061329D-01
10	-0.1364401D-02	-0.8061329D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8207000D 02	0.1399604D 03
14	-0.8207000D 02	-0.1399604D 03
15	-0.1216693D 03	0.0000000D 00
16	-0.1017711D 01	0.2013393D 01
17	-0.1017711D 01	-0.2013393D 01
18	-0.2411998D 01	0.0000000D 00
19	-0.4219609D 00	0.3361208D 00
20	-0.4219663D 00	-0.3361208D 00
21	-0.1351210D-02	0.8061522D-01
22	-0.1351210D 02	-0.8061522D-01
23	-0.4058111D-01	0.4178511D 00
24	-0.4058111D-01	-0.4178511D 00
25	-0.8191436D 02	0.1405937D 03
26	-0.8191436D 02	-0.1405937D 03
27	-0.1233422D 03	0.0000000D 00
28	-0.9777311D 00	0.0000000D 00
29	-0.4757134D 00	0.4694318D 00
30	-0.4757134D 00	-0.4694318D 00

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

162

NUMBER	REAL	IMAG
1	-0.8204206D 02	0.1400737D 03
2	-0.8204206D 02	-0.1400737D 03
3	-0.1219716D 03	0.0000000D 00
4	-0.9937510D 00	0.1991946D 01
5	-0.9937510D 00	-0.1991946D 01
6	-0.1524141D-02	0.8508128D-01
7	-0.1524141D-02	-0.8508128D-01
8	-0.4196586D 00	0.3455050D 00
9	-0.4196586D 00	-0.3455050D 00
10	-0.2191170D 01	0.0000000D 00
11	-0.2992a000D 00	0.1077a55D 01
12	-0.2090000D 00	-0.1077255D 01
13	-0.8191436D 02	0.1405937D 03
14	-0.8191436D 02	-0.1405937D 03
15	-0.1233422D 03	0.0000000D 00
16	-0.9777311D 00	0.0000000D 00
17	-0.4757134D 00	0.4694218D 00
18	-0.4757134D 00	-0.4694218D 00
19	-0.8202145D 02	0.1401555D 03
20	-0.8202145D 02	-0.1401555D 03
21	-0.1221834D 03	0.0000000D 00
22	-0.9871267D 00	0.1991138D 01
23	-0.9871267D 00	-0.1991138D 01
24	-0.2026718D 01	0.0000000D 00
25	-0.4650017D 00	0.3265635D 00
26	-0.4650017D 00	-0.3265635D 00
27	-0.3368280D-01	0.4081363D 00
28	-0.3368280D-01	-0.4081363D 00
29	-0.1532461D-02	0.8588800D-01
30	-0.1532461D-02	-0.8588800D+01

CD	A11	A12	A13
8	0.5000003E 00	0.0000000E 00	0.9660253E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

163

NUMBER	REAL	IMAG
1	-0.8197511D 02	0.1403462D 03
2	-0.8197511D 02	-0.1403462D 03
3	-0.1226935D 03	0.0000000D 00
4	-0.9496921D 00	0.1934525D 01
5	-0.9496921D 00	-0.1934525D 01
6	-0.1636031D 01	0.0000000D 00
7	-0.1858924D-02	0.9642513D-01
8	-0.1858924D-02	-0.9642513D-01
9	-0.4469448D 00	0.3638554D 00
10	-0.4469448D 00	-0.3638554D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8191436D 02	0.1405937D 03
14	-0.8191436D 02	-0.1405937D 03
15	-0.1233422D 03	0.0000000D 00
16	-0.9777311D 00	0.0000000D 00
17	-0.4757134D 00	0.4694318D 00
18	-0.4757134D 00	-0.4694318D 00
19	-0.8195334D 02	0.1404330D 03
20	-0.8195334D 02	-0.1404330D 03
21	-0.1229211D 03	0.0000000D 00
22	-0.9455555D 00	0.1934349D 01
23	-0.9455555D 00	-0.1934349D 01
24	-0.1331839D 01	0.0000000D 00
25	-0.5924252D 00	0.2913874D 00
26	-0.5924252D 00	-0.2913874D 00
27	-0.2300937D-01	0.3934807D 00
28	-0.2300937D-01	-0.3934807D 00
29	-0.1941895D-02	0.9644428D-01
30	-0.1941895D-02	-0.9644428D-01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

164

NUMBER	REAL	IMAG
1	-0.8185272D 02	0.1408528D 03
2	-0.8185272D 02	-0.1408528D 03
3	-0.1240172D 03	0.0000000D 00
4	-0.9773333D 00	0.1762401D 01
5	-0.9773333D 00	-0.1762401D 01
6	-0.4153471D 00	0.6188798D 00
7	-0.4153471D 00	-0.6188798D 00
8	-0.3244330D-02	0.1349548D 00
9	-0.3244330D-02	-0.1349548D 00
10	-0.5622485D 00	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.9704169D 00	0.1762672D 01
14	-0.9704169D 00	-0.1762672D 01
15	-0.4386283D-02	0.1352902D 00
16	-0.4386283D-02	-0.1352902D 00
17	-0.8191436D 02	0.1405937D 03
18	-0.8191436D 02	-0.1405937D 03
19	-0.1233422D 03	0.0000000D 00
20	-0.9777311D 00	0.0000000D 00
21	-0.4757134D 00	0.4694318D 00
22	-0.4757134D 00	-0.4694318D 00
23	-0.8183872D 02	0.1409098D 03
24	-0.8183872D 02	-0.1409098D 03
25	-0.1241642D 03	0.0000000D 00
26	-0.5726246D 00	0.8276682D 00
27	-0.5726246D 00	-0.8276682D 00
28	-0.3926159D 00	0.0000000D 00
29	0.2884104D-02	0.3580061D 00
30	0.2884104D-02	-0.3580061D 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2018000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

CD 20	CKIX 0 1240000E 06	CKIY 0 1105000E 06	CKIZ 0 1384000E 06
CD 18	CKR$_0$ 0 1107000E 05	CKPY 0 9860000E 04	CKPZ 0 1235000E 05
CD 19	CKPX 0 1964000E 05	CKDY 0 1750000E 05	CKPZ 0 2191000E 05
CD 20	CKIX 0 1550000E 05	CKIY 0 1381000E 05	CKIZ 0 1730000E 05

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********** EIGENVALUES **********

165

NUMBER	REAL	IMAG
1	-0.8282911D 02	0.1371633D 03
2	-0.8282911D 02	-0.1371833D 03
3	-0.1138709D 03	0.0000000D 00
4	-0.7165603D 01	0.0000000D 00
5	-0.1200893D 01	0.1941275D 01
6	-0.1200893D 01	-0.1941275D 01
7	-0.1483879D-02	0.7902770D-01
8	-0.1483879D-02	-0.7902770D-01
9	-0.9886078D 00	0.8749002D 00
10	-0.9886078D 00	-0.8749002D 00
11	-0.8278528D 02	0.1373363D 03
12	-0.8278528D 02	-0.1373363D 03
13	-0.1143262D 03	0.0000000D 00
14	-0.6784956D 01	0.0000000D 00
15	-0.1203755D 01	0.1946994D 01
16	-0.1203755D 01	-0.1946994D 01
17	-0.9934434D 00	0.8794553D 00
18	-0.9934434D 00	-0.8794553D 00
19	-0.1482724D-02	0.7902818D-01
20	-0.1482724D-02	-0.7902818D-01
21	-0.8227521D 02	0.1391876D 03
22	-0.8227521D 02	-0.1391876D 03
23	-0.1195319D 03	0.0000000D 00
24	-0.2559071D 01	0.0000000D 00
25	-0.1199352D 01	0.1160750D 01
26	-0.1199352D 01	-0.1160750D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

166

NUMBER	REAL	IMAG
1	-0.8281698D 02	0.1372253D 03
2	-0.8281698D 02	-0.1372253D 03
3	-0.1139964D 03	0.0000000D 00
4	-0.7063003D 01	0.0000000D 00
5	-0.1200283D 01	0.1941756D 01
6	-0.1200283D 01	-0.1941756D 01
7	-0.9898953D 00	0.8762475D 00
8	-0.9898953D 00	-0.8762475D 00
9	-0.1498773D-02	0.7942593D-01
10	-0.1498773D-02	-0.7942593D-01
11	-0.2992006D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8277139D 02	0.1373844D 03
14	-0.8277139D 02	-0.1373844D 03
15	-0.1144684D 03	0.0000000D 00
16	-0.6673122D 01	0.0000000D 00
17	-0.1203147D 01	0.1947577D 01
18	-0.1203147D 01	-0.1947577D 01
19	-0.9953280D 00	0.8803563D 00
20	-0.9953280D 00	-0.8803563D 00
21	-0.1497748D-02	0.7942938D-01
22	-0.1497748D-02	-0.7942938D-01
23	-0.4292018D-01	0.4213399D 00
24	-0.4292018D-01	-0.4213399D 00
25	-0.8227521D 02	0.1391876D 03
26	-0.8227521D 02	-0.1391876D 03
27	-0.1195919D 03	0.0000000D 00
28	-0.2559071D 01	0.0000000D 00
29	-0.1199352D 01	0.1160750D 01
30	-0.1199352D 01	-0.1160750D 01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

167

NUMBER	REAL	IMAG
1	-0.8278119D 02	0.1373501D 03
2	-0.8278119D 02	-0.1373501D 03
3	-0.1143667D 03	0.0000000D 00
4	-0.6760049D 01	0.0000000D 00
5	-0.1198335D 01	0.1943243D 01
6	-0.1198335D 01	-0.1943243D 01
7	-0.9939155D 00	0.8804975D 00
8	-0.9939155D 00	-0.8804975D 00
9	-0.1544843D-02	0.8064536D-01
10	-0.1544843D-02	-0.8064536D-01
11	-0.2992060D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8273093D 02	0.1375254D 03
14	-0.8273093D 02	-0.1375254D 03
15	-0.1148831D 03	0.0000000D 00
16	-0.6346334D 01	0.0000000D 00
17	-0.1201190D 01	0.1949383D 01
18	-0.1201190D 01	-0.1949383D 01
19	-0.1001192D 01	0.8832817D 00
20	-0.1001192D 01	-0.8832817D 00
21	-0.1544008D-02	0.8064953D-01
22	-0.1544008D-02	-0.8064953D-01
23	-0.4267837D-01	0.4213305D 00
24	-0.4267837D-01	-0.4213305D 00
25	-0.8227521D 02	0.1391876D 03
26	-0.8227521D 02	-0.1391876D 03
27	-0.1195919D 03	0.0000000D 00
28	-0.2559071D 01	0.0000000D 00
29	-0.1199352D 01	0.1160750D 01
30	-0.1199352D 01	-0.1160750D 01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

168

NUMBER	REAL	IMAG
1	-0.8264645D 02	0.1378262D 03
2	-0.8264645D 02	-0.1378262D 03
3	-0.1157610D 03	0.0000000D 00
4	-0.5617338D 01	0.0000000D 00
5	-0.1188279D 01	0.1949836D 01
6	-0.1188279D 01	-0.1949836D 01
7	-0.1012747D 01	0.9013712D 00
8	-0.1012747D 01	-0.9013712D 00
9	-0.1752174D-02	0.8592471D-01
10	-0.1752174D-02	-0.8592471D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8258506D 02	0.1380425D 03
14	-0.8258506D 02	-0.1380425D 03
15	-0.1163826D 03	0.0000000D 00
16	-0.5154527D 01	0.0000000D 00
17	-0.1190852D 01	0.1957435D 01
18	-0.1190852D 01	-0.1957435D 01
19	-0.1028425D 01	0.8991943D 00
20	-0.1028425D 01	-0.8991943D 00
21	-0.1752811D-02	0.8592972D-01
22	-0.1752811D-02	-0.8592972D-01
23	-0.4170334D-01	0.4212872D 00
24	-0.4170334D-01	-0.4212872D 00
25	-0.8227521D 02	0.1391876D 03
26	-0.8227521D 02	-0.1391876D 03
27	-0.1195919D 03	0.0000000D 00
28	-0.2559071D 01	0.0000000D 00
29	-0.1199352D 01	0.1160750D 01
30	-0.1199352D 01	-0.1160750D 01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

169

NUMBER	REAL	IMAG
1	-0.8244836D 02	0.1385436D 03
2	-0.8244836D 02	-0.1385436D 03
3	-0.1178079D 03	0.0000000D 00
4	-0.3936195D 01	0.0000000D 00
5	-0.1157676D 01	0.1961436D 01
6	-0.1157676D 01	-0.1961436D 01
7	-0.1057598D 01	0.9603151D 00
8	-0.1057598D 01	-0.9603151D 00
9	-0.2206016D-02	0.9650027D-01
10	-0.2206016D-02	-0.9650027D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8238615D 02	0.1387703D 03
14	-0.8238615D 02	-0.1387703D 03
15	-0.1184393D 03	0.0000000D 00
16	-0.3486033D 01	0.0000000D 00
17	-0.1158250D 01	0.1971910D 01
18	-0.1158250D 01	-0.1971910D 01
19	-0.1093450D 01	0.9539550D 00
20	-0.1093450D 01	-0.9539550D 00
21	-0.2211597D-02	0.9650123D-01
22	-0.2211597D-02	-0.9650123D-01
23	-0.4000254D-01	0.4211913D 00
24	-0.4000254D-01	-0.4211913D 00
25	-0.8227521D 02	0.1391876D 03
26	-0.8227521D 02	-0.1391876D 03
27	-0.1195913D 03	0.0000000D 00
28	-0.2559071D 01	0.0000000D 00
29	-0.1199352D 01	0.1160750D 01
30	-0.1199352D 01	-0.1160750D 01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

170

NUMBER	REAL	IMAG
1	-0.82103830 02	0.13985410 03
2	-0.82103830 02	-0.13985410 03
3	-0.12139790 03	0.00000000 00
4	-0.97648980 00	0.17328740 01
5	-0.97648980 00	-0.17328740 01
6	-0.99491450 00	0.15459680 01
7	-0.99491450 00	-0.15459660 01
8	-0.43094550-02	0.13528970 00
9	-0.43094550-02	-0.13528970 00
10	-0.15157660 01	0.00000000 00
11	-0.29920000 00	0.10772550 01
12	-0.29920000 00	-0.10772550 01
13	-0.97041690 00	0.17626720 01
14	-0.97041690 00	-0.17626720 01
15	-0.43802830-02	0.13529020 00
16	-0.43862830-02	-0.13529020 00
17	-0.82275210 02	0.13918760 03
18	-0.82275210 02	-0.13918760 03
19	-0.11859190 03	0.00000000 00
20	-0.25590710 01	0.00000000 00
21	-0.11993520 01	0.11607500 01
22	-0.11993520 01	-0.11607500 01
23	-0.82065710 02	0.13999990 03
24	-0.82065710 02	-0.13999990 03
25	-0.12178470 03	0.00000000 00
26	-0.10223950 01	0.15406090 01
27	-0.10223950 01	-0.15406090 01
28	-0.13434050 01	0.00000000 00
29	-0.34731560-01	0.42075770 00
30	-0.34731560-01	-0.42075770 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2640000E 04	J3Z 0.2505000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.2750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

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********** EIGENVALUES **********

171

NUMBER	REAL	IMAG
1	-0.8450060D 02	0.1323654D 03
2	-0.8450060D 02	-0.1323654D 03
3	-0.9765239D 02	0.0000000D 00
4	-0.1797126D 02	0.0000000D 00
5	-0.2084918D 01	0.1820396D 01
6	-0.2084918D 01	-0.1820396D 01
7	-0.1139538D 01	0.1814626D 01
8	-0.1139538D 01	-0.1814626D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.8437076D 02	0.1327100D 03
12	-0.8437076D 02	-0.1327100D 03
13	-0.9900270D 02	0.0000000D 00
14	-0.1684938D 02	0.0000000D 00
15	-0.2101778D 01	0.1833664D 01
16	-0.2101778D 01	-0.1833664D 01
17	-0.1139461D 01	0.1813457D 01
18	-0.1139461D 01	-0.1813457D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

172

NUMBER	REAL	IMAG
1	-0.8446449D 02	0.1124603D 03
2	-0.8446449D 02	-0.1124603D 03
3	-0.9802797D 02	0.0000000D 00
4	-0.1766205D 02	0.0000000D 00
5	-0.2088848D 01	0.1823493D 01
6	-0.2088848D 01	-0.1823493D 01
7	-0.1138521D 01	0.1814097D 01
8	-0.1138521D 01	-0.1814097D 01
9	-0.1509142D 02	0.7942605D-01
10	-0.1509142D-02	-0.7942605D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8433015D 02	0.1228180D 03
14	-0.8433015D 02	-0.1228180D 03
15	-0.9941704D 02	0.0000000D 00
16	-0.1651420D 02	0.0000000D 00
17	-0.2106331D 01	0.1837206D 01
18	-0.2106331D 01	-0.1837206D 01
19	-0.1138449D 01	0.1812917D 01
20	-0.1138449D 01	-0.1812917D 01
21	-0.1509083D-02	0.7942952D-01
22	-0.1509083D-02	-0.7942952D-01
23	-0.4299106D-01	0.4213453D 00
24	-0.4299106D-01	-0.4213453D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

173

NUMBER	REAL	IMAG
1	-0.8435863D 02	0.1327408D 03
2	-0.8435883D 02	-0.1327408D 03
3	-0.9912061D 02	0.0000000D 00
4	-0.1676237D 02	0.0000000D 00
5	-0.2101107D 01	0.1833227D 01
6	-0.2101107D 01	-0.1833227D 01
7	-0.1135385D 01	0.1812494D 01
8	-0.1135385D 01	-0.1812494D 01
9	-0.1555822D-02	0.8064550D-01
10	-0.1555822D-02	-0.8064550D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8421297D 02	0.1331333D 03
14	-0.8421297D 02	-0.1331333D 03
15	-0.1006070D 03	0.0000000D 00
16	-0.1555081D 02	0.0000000D 00
17	-0.2120532D 01	0.1848389D 01
18	-0.2120532D 01	-0.1848389D 01
19	-0.1135219D 01	0.1811317D 01
20	-0.1135319D 01	-0.1811317D 01
21	-0.1555743D-02	0.8064968D-01
22	-0.1555743D-02	-0.8064968D-01
23	-0.4296206D-01	0.4213524D 00
24	-0.4296206D-01	-0.4213524D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.7660440E 00	0.0000020E 00	0.6427980E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

174

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8397305D 02	0.1338016D 03
2	-0.8397305D 02	-0.1338016D 03
3	-0.1030445D 03	0.0000000D 00
4	-0.1352264D 02	0.0000000D 00
5	-0.2158370D 01	0.1880481D 01
6	-0.2158370D 01	-0.1880481D 01
7	-0.1121403D 01	0.1805851D 01
8	-0.1121403D 01	-0.1805851D 01
9	0.1756085D-02	0.8592490D-01
10	-0.1756086D-02	-0.8592490D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8380391D 02	0.1342781D 03
14	-0.8380391D 02	-0.1342781D 03
15	-0.1047087D 03	0.0000000D 00
16	-0.1221054D 02	0.0000000D 00
17	-0.2168854D 01	0.1903838D 01
18	-0.2168854D 01	-0.1903838D 01
19	-0.1121355D 01	0.1804642D 01
20	-0.1121355D 01	-0.1804642D 01
21	-0.1766250D-02	0.8592989D-01
22	-0.1766250D-02	-0.8592989D-01
23	-0.4284494D-01	0.4213914D 00
24	-0.4284494D-01	-0.4213914D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 02	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

175

NUMBER	REAL	IMAG
1	-0.8343926D 02	0.1353705D 03
2	-0.8343926D 02	-0.1353705D 03
3	-0.1083617D 03	0.0000000D 00
4	-0.9058156D 01	0.0000000D 00
5	-0.2295264D 01	0.2014038D 01
6	-0.2295264D 01	-0.2014038D 01
7	-0.1051708D 01	0.1794001D 01
8	-0.1051708D 01	-0.1794001D 01
9	-0.2227321D-02	0.9650059D-01
10	-0.2227321D-02	-0.9650059D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8327705D 02	0.1358589D 03
14	-0.8327705D 02	-0.1358589D 03
15	-0.1039130D 03	0.0000000D 00
16	-0.7856367D 01	0.0000000D 00
17	-0.2343613D 01	0.2071929D 01
18	-0.2343613D 01	-0.2071929D 01
19	-0.1091722D 01	0.1792722D 01
20	-0.1091722D 01	-0.1792722D 01
21	-0.2228114D-02	0.9650147D-01
22	-0.2228114D-02	-0.9650147D-01
23	-0.4263964D-01	0.4214325D 00
24	-0.4263964D-01	-0.4214325D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

********** EIGENVALUES **********

176

NUMBER	REAL	IMAG
1	-0.82587500 02	0.13814900 03
2	-0.82587500 02	-0.13814900 03
3	-0.11671850 03	0.00000000 00
4	-0.20354970 01	0.30611320 01
5	-0.20354970 01	-0.30611320 01
6	-0.31322900 01	0.00000030 00
7	-0.97003570 00	0.17614640 01
8	-0.97003570 00	-0.17614640 01
9	-0.13768050-02	0.13529120 00
10	-0.42768050-02	-0.13529120 00
11	-0.29920000 00	0.10772550 01
12	-0.29920000 00	-0.10772550 01
13	-0.97041690 00	0.17626720 01
14	-0.97041690 00	-0.17626720 01
15	-0.43062830-02	0.13529020 00
16	-0.43862830-02	-0.13529020 00
17	-0.82999210 02	0.13674950 03
18	-0.82999210 02	-0.13674950 03
19	-0.11265620 03	0.00000000 00
20	-0.95864100 01	0.00000000 00
21	-0.24285450 01	0.22725870 01
22	-0.24285450 01	-0.22725870 01
23	-0.82499350 02	0.13845130 03
24	-0.82499350 02	-0.13845130 03
25	-0.11750680 03	0.00000000 00
26	-0.18874130 01	0.30921330 01
27	-0.18874130 01	-0.30921330 01
28	-0.29195120 01	0.00000000 00
29	-0.41995150-01	0.42158940 00
30	-0.41995150-01	-0.42158940 00

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
	CKPX	CKPY	CKPZ

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1204000E 05
CD	CKRX	CKRY	CKRZ
18	0.4428000E 05	0.3944000E 05	0.4940000E 05
CD	CKPX	CKPY	CKPZ
19	0.3142000E 06	0.2800200E 06	0.2506000E 06
CD	CKIX	CKIY	CKIZ
20	0.5920000E 05	0.8840000E 06	0.1107000E 07

********** EIGENVALUES **********

177

NUMBER	REAL	IMAG
1	-0.9124404D 02	0.1214030D 03
2	-0.9124404D 02	-0.1214030D 03
3	-0.4903389D 02	0.3802099D 02
4	-0.4903389D 02	-0.3802099D 02
5	-0.4132876D 01	0.3486533D 01
6	-0.4132876D 01	-0.3486533D 01
7	-0.1126073D 01	0.1850114D 01
8	-0.1126073D 01	-0.1850114D 01
9	-0.1495323D-02	0.7902777D-01
10	-0.1495323D-02	-0.7902777D-01
11	-0.9058208D 02	0.1221839D 03
12	-0.9058208D 02	-0.1221839D 03
13	-0.4966591D 02	0.3460530D 02
14	-0.4966591D 02	-0.3460530D 02
15	-0.4164020D 01	0.3504480D 01
16	-0.4164020D 01	-0.3504480D 01
17	-0.1126021D 01	0.1850033D 01
18	-0.1126021D 01	-0.1850033D 01
19	-0.1495234D-02	0.7902868D-01
20	-0.1495234D-02	-0.7902868D-01
21	-0.8506848D 02	0.1315112D 03
22	-0.8506848D 02	-0.1315112D 03
23	-0.9488764D 02	0.0000000D 00
24	-0.1418799D 02	0.0000000D 00
25	-0.4938742D 01	0.4334494D 01
26	-0.4938742D 01	-0.4334494D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

178

NUMBER	REAL	IMAG
1	-0.9105774D 02	0.1216166D 03
2	-0.9105774D 02	-0.1216166D 03
3	-0.4921389D 02	0.3711389D 02
4	-0.4921389D 02	-0.3711389D 02
5	-0.4140113D 01	0.3491422D 01
6	-0.4140113D 01	-0.3491422D 01
7	-0.1125119D 01	0.1849615D 01
8	-0.1125119D 01	-0.1849615D 01
9	-0.1510426D-02	0.7942600D-01
10	-0.1510426D-02	-0.7942600D-01
11	-0.2990000D 00	0.1077255D 01
12	-0.2990000D 00	-0.1077255D 01
13	-0.9038105D 02	0.1224307D 03
14	-0.9038105D 02	-0.1224307D 03
15	-0.4986182D 02	0.3347135D 02
16	-0.4986182D 02	-0.3347135D 02
17	-0.4172599D 01	0.3510607D 01
18	-0.4172599D 01	-0.3510607D 01
19	-0.1125070D 01	0.1849535D 01
20	-0.1125070D 01	-0.1849535D 01
21	-0.4299956D-01	0.4213423D 00
22	-0.4299956D-01	-0.4213423D 00
23	-0.1510504D-02	0.7942946D-01
24	-0.1510504D-02	-0.7942946D-01
25	-0.8506849D 02	0.1315112D 03
26	-0.8506849D 02	-0.1315112D 03
27	-0.9489764D 02	0.0000000D 00
28	-0.1418799D 02	0.0000000D 00
29	-0.4938742D 01	0.4334494D 01
30	-0.4938742D 01	-0.4334494D 01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

179

NUMBER	REAL	IMAG
1	-0.9052341D 02	0.1222536D 03
2	-0.9052341D 02	-0.1222536D 03
3	-0.4972849D 02	0.3429363D 02
4	-0.4972849D 02	-0.3429363D 02
5	-0.4162729D 01	0.3506814D 01
6	-0.4162729D 01	-0.3506814D 01
7	-0.1122182D 01	0.1048077D 01
8	-0.1122182D 01	-0.1048077D 01
9	-0.1557192D-02	0.8064544D-01
10	-0.1557192D-02	-0.8064544D-01
11	-0.2660000D 00	0.1077255D 01
12	-0.2660000D 00	-0.1077255D 01
13	-0.8981428D 02	0.1231564D 03
14	-0.8981428D 02	-0.1231564D 03
15	-0.5041189D 02	0.2992061D 02
16	-0.5041189D 02	-0.2992061D 02
17	-0.4189407D 01	0.3529914D 01
18	-0.4189407D 01	-0.3529914D 01
19	-0.1122136D 01	0.1047997D 01
20	-0.1122136D 01	-0.1047997D 01
21	-0.4239610D-01	0.4213446D 00
22	-0.4239610D-01	-0.4213446D 00
23	-0.1557207D-02	0.8064562D-01
24	-0.1557207D-02	-0.8064562D-01
25	-0.8506843D 02	0.1315112D 03
26	-0.8506843D 02	-0.1315112D 03
27	-0.9489764D 02	0.0000000D 00
28	-0.1418799D 02	0.0000000D 00
29	-0.4938742D 01	0.4334494D 01
30	-0.4938742D 01	-0.4334494D 01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

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180 ********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8871255D 02	0.1247131D 03
2	-0.8871255D 02	-0.1247131D 03
3	-0.5144560D 02	0.2044913D 02
4	-0.5144560D 02	-0.2044913D 02
5	-0.4269302D 01	0.3581808D 01
6	-0.4269302D 01	-0.3581808D 01
7	-0.1109158D 01	0.1041207D 01
8	-0.1109158D 01	-0.1841207D 01
9	-0.1767822D-02	0.8592482D-01
10	-0.1767822D-02	-0.8592482D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8799263D 02	0.1258268D 03
14	-0.8799263D 02	-0.1258268D 03
15	-0.5214399D 02	0.9197982D 01
16	-0.5214399D 02	-0.9197982D 01
17	-0.4325857D 01	0.3624743D 01
18	-0.4325857D 01	-0.3624743D 01
19	-0.1109109D 01	0.1841122D 01
20	-0.1109109D 01	-0.1841122D 01
21	-0.4298222D-01	0.4213499D 00
22	-0.4298222D-01	-0.4213499D 00
23	-0.1767927D-02	0.8592982D-01
24	-0.1767927D-02	-0.8592982D-01
25	-0.8506849D 02	0.1315112D 03
26	-0.8506849D 02	-0.1315112D 03
27	-0.9489764D 02	0.0000000D 00
28	-0.1418799D 02	0.0000000D 00
29	-0.4938742D 01	0.4334494D 01
30	-0.4938742D 01	-0.4334494D 01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

181

NUMBER	REAL	IMAG
1	-0.86562580 02	0.12837180 03
2	-0.86562580 02	-0.12837180 03
3	-0.79501280 02	0.00000000 00
4	-0.27213040 02	0.00000000 00
5	-0.45347300 01	0.37917860 01
6	-0.45347300 01	-0.37917860 01
7	-0.10817090 01	0.18264700 01
8	-0.10817090 01	-0.18264700 01
9	-0.22209780-02	0.96500450-01
10	-0.22209780-02	-0.96500450-01
11	-0.29920000 00	0.10772550 01
12	-0.29920000 00	-0.10772550 01
13	-0.85991020 02	0.12949380 03
14	-0.85991020 02	-0.12949380 03
15	-0.85737750 02	0.00000000 00
16	-0.22026330 02	0.00000000 00
17	-0.46428410 01	0.39030970 01
18	-0.46428410 01	-0.39030970 01
19	-0.10816480 01	0.18263690 01
20	-0.10816430 01	-0.18263690 01
21	-0.42950010-01	0.42139990 00
22	-0.42950010-01	-0.42139990 00
23	-0.22301720-02	0.96501360-01
24	-0.22301730-02	-0.96501360-01
25	-0.85068490 02	0.13151120 03
26	-0.85068490 02	-0.13151120 03
27	-0.94897640 02	0.00000000 00
28	-0.14187990 02	0.00000000 00
29	-0.48387420 01	0.43344940 01
30	-0.48387420 01	-0.43344940 01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

182

NUMBER	REAL	IMAG
1	-0.8385135D 01	0.1047841D 02
2	-0.8385135D 01	-0.1047841D 02
3	-0.1061120D 03	0.0000000D 00
4	-0.4345019D 01	0.6273362D 01
5	-0.4346039D 01	-0.6273362D 01
6	-0.6597065D 01	0.0000000D 00
7	-0.9704731D 00	0.1762825D 01
8	-0.9704792D 00	-0.1762825D 01
9	-0.4385188D-02	0.1252906D 00
10	-0.4385188D-02	-0.1252906D 00
11	-0.2993000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8506849D 02	0.1315112D 03
14	-0.8506849D 02	-0.1315112D 03
15	-0.5489764D 02	0.0000000D 00
16	-0.1418799D 02	0.0000000D 00
17	-0.4938742D 01	0.4334494D 01
18	-0.4938742D 01	-0.4334494D 01
19	-0.9704169D 00	0.1762672D 01
20	-0.9704169D 00	-0.1762672D 01
21	-0.4386283D-02	0.1252902D 00
22	-0.4386283D-02	-0.1252902D 00
23	-0.8361245D 02	0.1352379D 03
24	-0.8361245D 02	-0.1352379D 03
25	-0.1082271D 03	0.0000000D 00
26	-0.3880469D 01	0.6423789D 01
27	-0.3880469D 01	-0.6423789D 01
28	-0.6079085D 01	0.0000000D 00
29	-0.4288182D-01	0.4213902D 00
30	-0.4288182D-01	-0.4213902D 00

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2907000E 04	J3Y 0.2678000E 04	J3Z 0.2685000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

```
CD                  CKIX                  CKIY                  CKIZ
20      -    0.1240000E 06         0.1105000E 06         0.1284000E 06

CD                  CKRX                  CKRY                  CKRZ
18           0.8856000E 05         0.7868000E 05         0.9880000E 05

CD                  CKPX                  CKPY                  CKPZ
19           0.1257000E 07         0.1120000E 07         0.1402000E 07

CD                  CKIX                  CKIY                  CKIZ
20           0.7936000E 07         0.7072000E 07         0.8858000E 07
```

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.1171928D 03	0.1146088D 03
2	-0.1171928D 03	-0.1146088D 03
3	-0.1904479D 02	0.8019558D 02
4	-0.1904479D 02	-0.8019558D 02
5	-0.8171774D 01	0.6832746D 01
6	-0.8171774D 01	-0.6832746D 01
7	-0.1127541D 01	0.1852615D 01
8	-0.1127541D 01	-0.1852615D 01
9	-0.1495481D-02	0.7902776D-01
10	-0.1495481D-02	-0.7902776D-01
11	-0.1156751D 03	0.1144511D 03
12	-0.1156751D 03	-0.1144511D 03
13	-0.2050900D 02	0.7856503D 02
14	-0.2050900D 02	-0.7856502D 02
15	-0.8226371D 01	0.6860539D 01
16	-0.8226371D 01	-0.6860539D 01
17	-0.1127533D 01	0.1852609D 01
18	-0.1127533D 01	-0.1852609D 01
19	-0.1495508D-02	0.7902825D-01
20	-0.1495508D-02	-0.7902825D-01
21	-0.9363216D 02	0.1206451D 03
22	-0.9363216D 02	-0.1206451D 03
23	-0.4107745D 02	0.3718740D 02
24	-0.4107745D 02	-0.3718740D 02
25	-0.9840428D 01	0.7908321D 01
26	-0.9840428D 01	-0.7908321D 01
27	-0.2992003D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 02
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

184

NUMBER	REAL	IMAG
1	-0.1167824D 03	0.1145607D 03
2	-0.1167824D 03	-0.1145607D 03
3	-0.1944277D 02	0.7976066D 02
4	-0.1944277D 02	-0.7976066D 02
5	-0.81851100D 01	0.6840015D 01
6	-0.81851100D 01	-0.6840015D 01
7	-0.1126587D 01	0.1852122D 01
8	-0.1126587D 01	-0.1852122D 01
9	-0.1510597D-02	0.7942599D-01
10	-0.1510597D-02	-0.7942599D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1151835D 03	0.1144094D 03
14	-0.1151835D 03	-0.1144094D 03
15	-0.2098780D 02	0.7802903D 02
16	-0.2098780D 02	-0.7802903D 02
17	-0.8242649D 01	0.6869814D 01
18	-0.8242649D 01	-0.6869814D 01
19	-0.1126582D 01	0.1852117D 01
20	-0.1126582D 01	-0.1852117D 01
21	-0.1510680D-02	0.7942944D-01
22	-0.1510680D 02	-0.7942944D-01
23	-0.4300056D-01	0.4213429D 00
24	-0.4300056D-01	-0.4213429D 00
25	-0.9363216D 02	0.1206451D 03
26	-0.9363216D 02	-0.1206451D 03
27	-0.4107745D 02	0.3718740D 02
28	-0.4107745D 02	-0.3718740D 02
29	-0.9840438D 01	0.7908321D 01
30	-0.9840438D 01	-0.7908321D 01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

185

NUMBER	REAL	IMAG
1	-0.1155360D 03	0.1144371D 02
2	-0.1155360D 03	-0.1144371D 03
3	-0.2065038D 02	0.7841750D 02
4	-0.2065038D 02	-0.7841750D 02
5	-0.8226788D 01	0.6862779D 01
6	-0.8226788D 01	-0.6862779D 01
7	-0.1123647D 01	0.1850597D 01
8	-0.1123647D 01	-0.1850597D 01
9	-0.1557361D-02	0.8064543D-01
10	-0.1557361D-02	-0.8064543D-01
11	-0.2961000D 00	0.1077255D 01
12	-0.2961000D 00	-0.1077255D 01
13	-0.1137029D 03	0.1143178D 03
14	-0.1137029D 03	-0.1143178D 03
15	-0.2242767D 02	0.7637793D 02
16	-0.2242767D 02	-0.7637793D 02
17	-0.9293497D 01	0.6880828D 01
18	-0.9293497D 01	-0.6880828D 01
19	-0.1123646D 01	0.1850594D 01
20	-0.1123646D 01	-0.1850594D 01
21	-0.1557390D-02	0.8064963D-01
22	-0.1557390D-02	-0.8064963D-01
23	-0.4300011D-01	0.4213430D 00
24	-0.4300011D-01	-0.4213430D 00
25	-0.9363216D 02	0.1206451D 03
26	-0.9363216D 02	-0.1206451D 03
27	-0.4107745D 02	0.3718740D 02
28	-0.4107745D 02	-0.3718740D 02
29	-0.9840438D 01	0.7908321D 01
30	-0.9840438D 01	-0.7908321D 01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

186

NUMBER	REAL	IMAG
1	-0.1103353D 03	0.1143207D 03
2	-0.1103353D 03	-0.1143207D 03
3	-0.2566744D 02	0.7235586D 02
4	-0.2566744D 02	-0.7235586D 02
5	-0.8423290D 01	0.6971148D 01
6	-0.8423290D 01	-0.6971148D 01
7	-0.1110592D 01	0.1843755D 01
8	-0.1110592D 01	-0.1843755D 01
9	-0.1768028D-02	0.8592480D-01
10	-0.1768028D-02	-0.8592480D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1077365D 03	0.1145291D 03
14	-0.1077365D 03	-0.1145291D 03
15	-0.2819114D 02	0.6897805D 02
16	-0.2819114D 02	-0.6897805D 02
17	-0.8533304D 01	0.7037053D 01
18	-0.8533304D 01	-0.7037053D 01
19	-0.1110590D 01	0.1843751D 01
20	-0.1110590D 01	-0.1843751D 01
21	-0.1768136D-02	0.8592980D-01
22	-0.1768136D-02	-0.8592980D-01
23	-0.4299842D-01	0.4213436D 00
24	-0.4299842D-01	-0.4213436D 00
25	-0.9363216D 02	0.1206451D 03
26	-0.9363216D 02	-0.1206451D 03
27	-0.4107745D 02	0.3718740D 02
28	-0.4107745D 02	-0.3718740D 02
29	-0.9840438D 01	0.7908321D 01
30	-0.9840438D 01	-0.7908321D 01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

187

NUMBER	REAL	IMAG
1	-0.1013422D 03	0.1160815D 03
2	-0.1013422D 03	-0.1160815D 03
3	-0.3413514D 02	0.5866071D 02
4	-0.3413514D 02	-0.5866071D 02
5	-0.8915832D 01	0.7252234D 01
6	-0.8915832D 01	-0.7252234D 01
7	-0.1082984D 01	0.1828901D 01
8	-0.1082984D 01	-0.1828901D 01
9	-0.2930304D-02	0.9650042D-01
10	-0.2930304D-02	-0.9650042D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.9844160D 02	0.1173571D 03
14	-0.9844160D 02	-0.1173571D 03
15	-0.3692352D 02	0.5253975D 02
16	-0.3692352D 02	-0.5253975D 02
17	-0.9143424D 01	0.7404236D 01
18	-0.9143424D 01	-0.7404236D 01
19	-0.1062972D 01	0.1828891D 01
20	-0.1062972D 01	-0.1828891D 01
21	-0.2230430D-02	0.9650134D-01
22	-0.2230430D-02	-0.9650134D-01
23	-0.4296557D-01	0.4213453D 00
24	-0.4296557D-01	-0.4213453D 00
25	-0.9363216D 02	0.1206451D 03
26	-0.9363216D 02	-0.1206451D 03
27	-0.4107745D 02	0.3718740D 02
28	-0.4107745D 02	-0.3718740D 02
29	-0.9840438D 01	0.7908321D 01
30	-0.9840438D 01	-0.7908321D 01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

188

NUMBER	REAL	IMAG
1	-0.8811045D 02	0.1270846D 01
2	-0.8811045D 02	-0.1270846D 02
3	-0.7580418D 02	0.0000000D 00
4	-0.1068615D 02	0.1317367D 02
5	-0.1068615D 02	-0.1317367D 02
6	-0.1572975D 02	0.0000000D 00
7	-0.9704268D 00	0.1762685D 01
8	-0.9704268D 00	-0.1762685D 01
9	-0.4386230D 02	0.1352904D 00
10	-0.4386230D-02	-0.1352904D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.9704169D 00	0.1762672D 01
14	-0.9704169D 00	-0.1762672D 01
15	-0.4386283D-02	0.1352902D 00
16	-0.4386283D-02	-0.1352902D 00
17	-0.8721091D 02	0.1285009D 03
18	-0.8721091D 02	-0.1285009D 02
19	-0.8345489D 02	0.0000000D 00
20	-0.8992651D 01	0.1401758D 02
21	-0.8992651D 01	-0.1401758D 02
22	-0.1312571D 02	0.0000000D 00
23	-0.4298634D-01	0.4213496D 00
24	-0.4298634D-01	-0.4213496D 00
25	-0.9363216D 02	0.1206451D 03
26	-0.9363216D 02	-0.1206451D 03
27	-0.4107745D 02	0.3718740D 02
28	-0.4107745D 02	-0.3718740D 02
29	-0.9840438D 01	0.7908321D 01
30	-0.9840438D 01	-0.7908321D 01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1350000E 03	M3 0.2603000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1624000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 05	0.1384000E 06
CD	CKRX	CKRY	CKRZ
18	0.1328000E 06	0.1183000E 05	0.1482000E 06
CD	CKPX	CKPY	CKPZ
19	0.2828000E 07	0.2520000E 07	0.3155000E 07
CD	CKIX	CKIY	CKIZ
20	0.2678000E 08	0.2381000E 09	0.2989000E 08

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********** EIGENVALUES **********

189

NUMBER	REAL	IMAG
1	-0.1327090D 03	0.1198348D 03
2	-0.1327090D 03	-0.1198348D 03
3	0.4687778D 00	0.9352745D 02
4	0.4687778D 00	-0.9352745D 02
5	-0.1216891D 02	0.1008861D 02
6	-0.1216891D 02	-0.1008861D 02
7	-0.1127721D 01	0.1852773D 01
8	-0.1127721D 01	-0.1852773D 01
9	-0.1495497D-02	0.7902775D-01
10	-0.1495497D-02	-0.7902775D-01
11	-0.1313419D 03	0.1193420D 03
12	-0.1313419D 03	-0.1193420D 03
13	-0.8229052D 00	0.9222357D 02
14	-0.8229052D 00	-0.9222357D 02
15	-0.1224554D 02	0.1008704D 02
16	-0.1224554D 02	-0.1008704D 02
17	-0.1127719D 01	0.1852772D 01
18	-0.1127719D 01	-0.1852772D 01
19	-0.1495526D-02	0.7902824D-01
20	-0.1495526D-02	-0.7902824D-01
21	-0.1074627D 03	0.1160097D 03
22	-0.1074627D 03	-0.1160097D 03
23	-0.2264904D 02	0.6432980D 02
24	-0.2264904D 02	-0.6432980D 02
25	-0.1443833D 02	0.1107306D 02
26	-0.1443833D 02	-0.1107306D 02
27	-0.2903009D 00	0.1077255D 01
28	-0.2932003D 00	-0.1077255D 01
29	-0.4300070D-01	0.4217418D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

190

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.1323380D 03	0.1196998D 03
2	-0.1323380D 03	-0.1196998D 03
3	0.1154016D 00	0.9317475D 02
4	0.1154016D 00	-0.9317475D 02
5	-0.1218748D 02	0.1009673D 02
6	-0.1218748D 02	-0.1009673D 02
7	-0.1126767D 01	0.1852260D 01
8	-0.1126767D 01	-0.1852260D 01
9	-0.1510613D-02	0.7942599D-01
10	-0.1510613D-02	-0.7942599D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1308978D 03	0.1191935D 03
14	-0.1308978D 03	-0.1191935D 03
15	-0.1247521D 01	0.9179775D 02
16	-0.1247521D 01	-0.9179775D 02
17	-0.1226847D 02	0.1009727D 02
18	-0.1226847D 02	-0.1009727D 02
19	-0.1126768D 01	0.1852280D 01
20	-0.1126768D 01	-0.1852280D 01
21	-0.1510698D-02	0.7942944D-01
22	-0.1510698D-02	-0.7942944D-01
23	-0.4300066D-01	0.4213429D 00
24	-0.4300066D-01	-0.4213429D 00
25	-0.1074627D 03	0.1160097D 03
26	-0.1074627D 03	-0.1160097D 03
27	-0.2264904D 02	0.6432980D 02
28	-0.2264904D 02	-0.6432980D 02
29	-0.1443833D 02	0.1107306D 02
30	-0.1443833D 02	-0.1107306D 02

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

191

NUMBER	REAL	IMAG
1	-0.1312117D 03	0.1192999D 03
2	-0.1312117D 03	-0.1192999D 03
3	-0.9588550D 00	0.9209785D 02
4	-0.9588550D 00	-0.9209785D 02
5	-0.1224543D 02	0.1012205D 02
6	-0.1224543D 02	-0.1012205D 02
7	-0.1123828D 01	0.1850757D 01
8	-0.1123828D 01	0.1850757D 01
9	-0.1757390D-02	0.8004543D-01
10	-0.1757390D-02	-0.8004543D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1295594D 03	0.1187442D 03
14	-0.1295594D 03	-0.1187442D 03
15	-0.2524520D 01	0.9050464D 02
16	-0.2524520D 01	-0.9050464D 02
17	-0.1233998D 02	0.1012906D 02
18	-0.1233998D 02	-0.1012906D 02
19	-0.1123832D 01	0.1850758D 01
20	-0.1123832D 01	-0.1850759D 01
21	-0.1557408D-02	0.8064960D-01
22	-0.1557408D-02	-0.8064960D-01
23	-0.4300050D-01	0.4213428D 00
24	-0.4300050D-01	-0.4213426D 00
25	-0.1074027D 01	0.1160397D 03
26	-0.1074627D 03	-0.1160397D 03
27	-0.2264904D 02	0.6432980D 02
28	-0.2264904D 02	-0.6432980D 02
29	-0.1447833D 02	0.1107306D 02
30	-0.1447833D 02	-0.1107306D 02

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000300E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

192

NUMBER	REAL	IMAG
1	-0.1254892D 02	0.1178159D 02
2	-0.1254892D 02	-0.1178159D 02
3	-0.5419204D 01	0.8746276D 02
4	-0.5419204D 01	-0.8746276D 02
5	-0.1251732D 02	0.1023982D 02
6	-0.1251732D 02	-0.1023982D 02
7	-0.1110771D 01	0.1843919D 01
8	-0.1110771D 01	-0.1843919D 01
9	-0.1768060D-02	0.8592490D-01
10	-0.1768060D-02	-0.8592490D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1240876D 03	0.1171824D 03
14	-0.1240876D 03	-0.1171824D 03
15	-0.7698223D 01	0.8502959D 02
16	-0.7698223D 01	-0.8502959D 02
17	-0.1267495D 02	0.1027591D 02
18	-0.1267495D 02	-0.1027591D 02
19	-0.1110775D 01	0.1843921D 01
20	-0.1110775D 01	-0.1843921D 01
21	-0.1768157D-02	0.8592980D-01
22	-0.1768157D-02	-0.8592980D-01
23	-0.4299999D-01	0.4213429D 00
24	-0.4299999D-01	-0.4213429D 00
25	-0.1074627D 03	0.1160097D 03
26	-0.1074627D 03	-0.1160097D 03
27	-0.2264904D 02	0.6432980D 02
28	-0.2264904D 02	-0.6432980D 02
29	-0.1443833D 02	0.1107306D 02
30	-0.1443833D 02	-0.1107306D 02

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

193

NUMBER	REAL	IMAG
1	-0.1177025D 03	0.1160180D 03
2	-0.1177025D 03	-0.1160180D 03
3	-0.1356427D 02	0.7807090D 02
4	-0.1356227D 02	-0.7801090D 02
5	-0.1318824D 02	0.1052319D 02
6	-0.1318824D 02	-0.1052319D 02
7	-0.1083149D 01	0.1823062D 01
8	-0.1083149D 01	-0.1823062D 01
9	-0.2230342D-02	0.9650942D-01
10	-0.2230342D-02	-0.9650942D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1143792D 03	0.1157174D 03
14	-0.1143792D 03	-0.1157174D 03
15	-0.1662544D 02	0.7407989D 02
16	-0.1662544D 02	-0.7407989D 02
17	-0.1350974D 02	0.1062851D 02
18	-0.1350974D 02	-0.1062851D 02
19	-0.1083142D 01	0.1829059D 01
20	-0.1083142D 01	-0.1829059D 01
21	-0.2230456D-02	0.9650134D-01
22	-0.2230456D-02	-0.9650134D-01
23	-0.4299921D-01	0.4213436D 00
24	-0.4299921D-01	-0.4213436D 00
25	-0.1074627D 03	0.1160097D 03
26	-0.1074627D 03	-0.1160097D 03
27	-0.2264304D 02	0.6412980D 02
28	-0.2264304D 02	-0.6412980D 02
29	-0.1441933D 02	0.1107306D 02
30	-0.1441933D 02	-0.1107306D 02

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

194

NUMBER	REAL	IMAG
1	-0.9560672D 02	0 1204424D 03
2	-0.9560672D 02	-0 1204424D 03
3	-0 2720212D 02	0 7284333D 02
4	-0.2720212D 02	-0 7284333D 02
5	-0.2165272D 02	0 1312637D 02
6	-0 2165272D 02	-0 1312637D 02
7	-0.9704189D 00	0.1762675D 01
8	-0.9704189D 00	-0.1762675D 01
9	-0 4386334D-02	0 1352904D 00
10	-0 4386334D-02	-0.1352904D 00
11	-0.2992000D 00	0 1077255D 01
12	-0.2992000D 00	-0 1077255D 01
13	-0.9704169D 00	0.1762672D 01
14	-0 9704169D 00	-0 1762672D 01
15	-0.4386283D-02	0 1352902D 00
16	-0 4386283D-02	-0 1352902D 00
17	-0 9337638D 02	0 1223695D 03
18	-0 9337678D 02	-0 1223695D 03
19	-0 1783135D 02	0 2579204D 02
20	-0 1783135D 02	0 2579204D 02
21	-0 2911354D 02	0.0000000D 00
22	-0 4276470-01	0 4213449D 00
23	-0 4276470-01	-0 4213449D 00
24	-0.2754340D 02	0 0001000D 00
25	-0.1074627D 03	0.1100997D 03
26	-0 1074627D 03	-0.1100997D 03
27	-0 2264904D 02	0.6432980D 02
28	-0 2264904D 02	-0.6432980D 02
29	-0 1447833D 02	0 1107306D 02
30	-0 1447833D 02	-0 1107306D 02

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1542000E 07	0.6944000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2903000E 04	0.2648000E 04	0.2605000E 04
5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1688999E 01
8	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
9	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
11	R120X	R120Y	R120Z
	0.4150000E 01	0.0000000E 00	0.6731000E 00
12	RE20X	RE20Y	RE20Z
	0.0000000E 00	0.0000000E 00	-0.3750000E 00
13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
14	SDX	SDY	SDZ
	0.1496000E 02	0.1496000E 02	0.2992000E 02
15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
17	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000003E 00
18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF CONTROL LOOP BANDWIDTH FOR VARIOUS TELESCOPE LOOK ANGLES

CD	CKIX	CKIY	CKIZ
20	0.1240000E 05	0.1105000E 06	0.1384000E 06
CD	CKRX	CKRY	CKRZ
18	0.2214000E 05	0.1972000E 06	0.2470000E 06
CD	CKPX	CKPY	CKPZ
19	0.7956000E 07	0.7000000E 07	0.8764000E 07
CD	CKIX	CKIY	CKIZ
20	0.1240000E 09	0.1105000E 09	0.1384000E 09

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********** EIGENVALUES **********

195

NUMBER	REAL	IMAG
1	-0.1495349D 03	0.1299115D 03
2	-0.1495349D 03	-0.1299115D 03
3	0.2512935D 02	0.1081486D 03
4	0.2512935D 02	-0.1081486D 03
5	-0.2000353D 02	0.1639393D 02
6	-0.2000353D 02	-0.1639393D 02
7	-0.1127782D 01	0.1857815D 01
8	-0.1127782D 01	-0.1857815D 01
9	-0.1495502D-02	0.7902775D-01
10	-0.1495502D-02	-0.7902775D-01
11	-0.1482296D 03	0.1292204D 03
12	-0.1482296D 03	-0.1292204D 03
13	0.2393082D 02	0.1069167D 03
14	0.2393082D 02	-0.1069167D 03
15	-0.2011149D 02	0.1642022D 02
16	-0.2011149D 02	-0.1642022D 02
17	-0.1127782D 01	0.1852815D 01
18	-0.1127782D 01	-0.1852815D 01
19	-0.1495532D-02	0.7902824D-01
20	-0.1495532D-02	-0.7902824D-01
21	-0.1261950D 03	0.1202020D 03
22	-0.1261950D 03	-0.1202020D 03
23	0.4574989D 01	0.8475763D 02
24	0.4574983D 01	-0.8475763D 02
25	-0.2293005D 02	0.1700125D 02
26	-0.2293005D 02	-0.1700125D 02
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4306070D-01	0.4213429D 00
30	-0.4306070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000F 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

196

NUMBER	REAL	IMAG
1	-0.1491818D 03	0.1297222D 03
2	-0.1491818D 03	-0.1297222D 03
3	0.2480155D 02	0.1078157D 03
4	0.2480155D 02	-0.1078157D 03
5	-0.2002982D 02	0.1640103D 02
6	-0.2002982D 02	-0.1640103D 02
7	-0.1126828D 01	0.1852322D 01
8	-0.1126828D 01	-0.1852322D 01
9	-0.1510513D-02	0.7942599D-01
10	-0.1510513D-02	-0.7942599D-01
11	-0.2942000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1478092D 03	0.1289992D 02
14	-0.1478092D 03	-0.1289992D 02
15	0.2251955D 02	0.1065191D 03
16	0.2353959D 02	-0.1065191D 03
17	-0.2014409D 02	0.1642916D 02
18	-0.2014409D 02	-0.1642916D 02
19	-0.1126831D 01	0.1852324D 01
20	-0.1126831D 01	-0.1852324D 01
21	-0.1510704D-02	0.7942944D-01
22	-0.1510704D-02	-0.7942944D-01
23	-0.4300669D-01	0.4213429D 00
24	-0.4300669D-01	-0.4213429D 00
25	-0.1261950D 03	0.1202020D 03
26	-0.1261950D 03	-0.1202020D 03
27	0.4574989D 01	0.8475763D 02
28	0.4574989D 01	-0.8475763D 02
29	-0.2293005D 02	0.1700025D 02
30	-0.2293005D 02	-0.1700025D 02

CD	A11	A12	A13
8	0.9196930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

197

NUMBER	REAL	IMAG
1	-0.1481128D 03	0.1291558D 03
2	-0.1481128D 03	-0.1291558D 03
3	0.2381152D 02	0.1068059D 03
4	0.2381152D 02	-0.1068059D 03
5	-0.2011164D 02	0.1642292D 02
6	-0.2011164D 02	-0.1642292D 02
7	-0.1123889D 01	0.1850799D 01
8	-0.1123889D 01	-0.1850799D 01
9	-0.1557386D-02	0.8064542D-01
10	-0.1557386D-02	-0.8064542D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1465467D 03	0.1283446D 03
14	-0.1465467D 03	-0.1283446D 03
15	0.2236829D 02	0.1053215D 03
16	0.2236829D 02	-0.1053215D 03
17	-0.2024537D 02	0.1645655D 02
18	-0.2024537D 02	-0.1645655D 02
19	-0.1123896D 01	0.1850803D 01
20	-0.1123896D 01	-0.1850803D 01
21	-0.1557414D-02	0.8064960D-01
22	-0.1557414D-02	-0.8064960D-01
23	-0.4300063D-01	0.4213428D 00
24	-0.4300063D-01	-0.4213428D 00
25	-0.1261950D 03	0.1202020D 03
26	-0.1261950D 03	-0.1202020D 03
27	0.4574989D 01	0.8475763D 02
28	0.4574989D 01	-0.8475763D 02
29	-0.2293005D 02	0.1700025D 02
30	-0.2293005D 02	-0.1700025D 02

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

198

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.1436820D 03	0.1269181D 03
2	-0.1436820D 03	-0.1269181D 03
3	0.1974670D 02	0.1025804D 03
4	0.1974670D 02	-0.1025804D 02
5	-0.2049051D 02	0.1651997D 02
6	-0.2049051D 02	-0.1651997D 02
7	-0.1110832D 01	0.1843963D 01
8	-0.1110832D 01	-0.1843963D 01
9	-0.1768067D-02	0.8592420D-01
10	-0.1768067D-02	-0.8592420D-01
11	-0.2992000D 00	0.1077250D 01
12	-0.2992000D 00	-0.1077250D 01
13	-0.1414525D 03	0.1258575D 03
14	-0.1414525D 03	-0.1258575D 03
15	0.1770320D 02	0.1004292D 03
16	0.1770320D 02	-0.1004292D 03
17	-0.2071141D 02	0.1657555D 02
18	-0.2071141D 02	-0.1657555D 02
19	-0.1110838D 01	0.1843966D 01
20	-0.1110838D 01	-0.1843966D 01
21	-0.1768164D-02	0.8592980D-01
22	-0.1768164D-02	-0.8592980D-01
23	-0.4300050D-01	0.4213426D 00
24	-0.4300050D-01	-0.4213426D 00
25	-0.1261950D 03	0.1202020D 03
26	-0.1261950D 03	-0.1202020D 03
27	0.4574989D 01	0.8475763D 02
28	0.4574989D 01	-0.8475763D 02
29	-0.2293005D 02	0.1700025D 02
30	-0.2293005D 02	-0.1700025D 02

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

199

NUMBER	REAL	IMAG
1	-0.13562310 03	0.12336070 03
2	-0.13562310 03	-0.12336070 03
3	0.12557330 02	0.94661670 02
4	0.12557330 02	-0.94661670 02
5	-0.21387190 02	0.16720620 02
6	-0.21387190 02	-0.16720620 02
7	-0.10832050 01	0.18291060 01
8	-0.10832050 01	-0.18291060 01
9	-0.22303530-02	0.96500420-01
10	-0.22303530-02	-0.96500420-01
11	-0.29920000 00	0.10772550 01
12	-0.29920000 00	-0.10772550 01
13	-0.13260070 03	0.12220810 03
14	-0.13260070 03	-0.12220810 03
15	0.98954450 01	0.91590960 02
16	0.98954450 01	-0.91590960 02
17	-0.21809050 02	0.16809590 02
18	-0.21809050 02	-0.16809590 02
19	-0.10832020 01	0.18291040 01
20	-0.10832020 01	-0.18291040 01
21	-0.22304640-02	0.96501340-01
22	-0.22304640-02	-0.96501340-01
23	-0.43000400-01	0.42134300 00
24	-0.43000400-01	-0.42134300 00
25	-0.12619500 03	0.12020200 03
26	-0.12619500 03	-0.12020200 03
27	0.45749890 01	0.84757630 02
28	0.45749890 01	-0.84757630 02
29	-0.22930050 02	0.17000250 02
30	-0.22930050 02	-0.17000250 02

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

200

NUMBER	REAL	IMAG
1	-0.1126718D 03	0.1183544D 03
2	-0.1126718D 03	-0.1183544D 03
3	-0.4504501D 01	0.6799410D 02
4	-0.4504501D 01	-0.6799410D 02
5	-0.2738730D 02	0.1684847D 02
6	-0.2738730D 02	-0.1684847D 02
7	-0.9704162D 00	0.1762672D 01
8	-0.9704162D 00	-0.1762672D 01
9	-0.4386768D-02	0.1352904D 00
10	-0.4386768D-02	-0.1352904D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.9704169D 00	0.1762672D 01
14	-0.9704169D 00	-0.1762672D 01
15	-0.4386283D-02	0.1352902D 00
16	-0.4386283D-02	-0.1352902D 00
17	-0.1261950D 03	0.1200020D 03
18	-0.1261950D 03	-0.1200020D 03
19	0.4574989D 01	0.8475763D 02
20	0.4574989D 01	-0.8475763D 02
21	-0.2292005D 02	0.1700025D 02
22	-0.2292005D 02	-0.1700025D 02
23	-0.1090380D 03	0.1185438D 03
24	-0.1090380D 03	-0.1185438D 03
25	-0.6075011D 01	0.6268459D 02
26	-0.6075011D 01	-0.6268459D 02
27	-0.2953083D 02	0.1631403D 02
28	-0.2953083D 02	-0.1631403D 02
29	-0.4299977D-01	0.4213432D 00
30	-0.4299977D-01	-0.4213432D 00

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3. SYSTEM STABILITY AS A FUNCTION OF GIMBAL TORQUER TIME CONSTANT VARIATIONS

The data that follows shows the IPS eigenvalue dependance as the gimbal torquer time constant (ω_{nt}) is varied for zero and 60 degree telescope look angles. All other system parameters remained constant.

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GIMBAL TORQUER TIME CONSTANT VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	CMGNT	OMGNS	ZETAS
17	0.6285000E 01	0.1634000E 03	0.5000000E 00

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20

NUMBER	REAL	IMAG
1	-0.8202216D 02	0.1413133D 03
2	-0.8202216D 02	0.1413133D 03
3	-0.6449420D 00	0.9586179D 01
4	-0.6449420D 00	-0.9586179D 01
5	-0.1129094D 01	0.1820122D 01
6	-0.1129094D 01	-0.1820122D 01
7	-0.2023132D 01	0.1624362D 01
8	-0.2023132D 01	-0.1624362D 01
9	-0.1494054D-02	0.7902784D-01
10	-0.1494054D-02	-0.7902784D-01
11	-0.8202103D 02	0.1413198D 03
12	-0.8202103D 02	-0.1413198D 03
13	-0.6461323D 00	0.9396624D 01
14	-0.6461323D 00	-0.9396624D 01
15	-0.2034438D 01	0.1624977D 01
16	-0.2034438D 01	-0.1624977D 01
17	-0.1128881D 01	0.1819248D 01
18	-0.1128881D 01	-0.1819248D 01
19	-0.1493936D-02	0.7902834D-01
20	-0.1493936D-02	-0.7902834D-01
21	-0.8188262D 02	0.1414002D 03
22	-0.8188262D 02	-0.1414002D 03
23	-0.7195179D 00	0.6617909D 01
24	-0.7195179D 00	-0.6617909D 01
25	-0.2240359D 01	0.1586221D 01
26	-0.2240359D 01	-0.1586221D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 02	0.1634000E 03	0.5000000E 00

********** EIGENVALUES **********

21

NUMBER	REAL	IMAG
1	-0.8236540D 02	0.1410910D 03
2	-0.8236540D 02	-0.1410910D 03
3	-0.3411953D 01	0.1270075D 02
4	-0.3411953D 01	-0.1270075D 02
5	-0.2059940D 01	0.1714724D 01
6	-0.2059940D 01	-0.1714724D 01
7	-0.1134525D 01	0.1817514D 01
8	-0.1134525D 01	-0.1817514D 01
9	-0.1494053D-02	0.7902783D-01
10	-0.1494053D-02	-0.7902783D-01
11	-0.8234299D 02	0.1411047D 03
12	-0.8234299D 02	-0.1411047D 03
13	-0.3420969D 01	0.1240417D 02
14	-0.3420969D 01	-0.1240417D 02
15	-0.2074623D 01	0.1720270D 01
16	-0.2074623D 01	-0.1720270D 01
17	-0.1134390D 01	0.1816501D 01
18	-0.1134390D 01	-0.1816501D 01
19	-0.1493935D-02	0.7902833D-01
20	-0.1493935D-02	-0.7902833D-01
21	-0.8206493D 02	0.1412760D 03
22	-0.8206493D 02	-0.1412760D 03
23	-0.3510356D 01	0.7835304D 01
24	-0.3510356D 01	-0.7835304D 01
25	-0.2409705D 01	0.1804156D 01
26	-0.2409705D 01	-0.1804156D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.2514000E 02	0.1634000E 03	0.5000000E 00

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********** EIGENVALUES **********

22

NUMBER	REAL	IMAG
1	-0.8302588D 02	0.1405586D 03
2	-0.8302588D 02	-0.1405586D 03
3	-0.9018092D 01	0.1590749D 02
4	-0.9018092D 01	-0.1590749D 02
5	-0.2075553D 01	0.1770180D 01
6	-0.2075553D 01	-0.1770180D 01
7	-0.1137299D 01	0.1815978D 01
8	-0.1137299D 01	-0.1815978D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.8298061D 02	0.1405894D 03
12	-0.8298061D 02	-0.1405894D 03
13	-0.9048466D 01	0.1540993D 02
14	-0.9048466D 01	-0.1540993D 02
15	-0.2091710D 01	0.1779541D 01
16	-0.2091710D 01	-0.1779541D 01
17	-0.1137199D 01	0.1814882D 01
18	-0.1137199D 01	-0.1814882D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.8242224D 02	0.1409770D 03
22	-0.8242224D 02	-0.1409770D 03
23	-0.9366126D 01	0.6515440D 01
24	-0.9366126D 01	-0.6515440D 01
25	-0.2481626D 01	0.2028327D 01
26	-0.2481626D 01	-0.2028327D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.6284999E 02	0.1634000E 03	0.5000000E 00

********** EIGENVALUES **********

23

NUMBER	REAL	IMAG
1	-0.8472650D 02	0.1381809D 03
2	-0.8472650D 02	-0.1381809D 03
3	-0.2616342D 02	0.1204784D 02
4	-0.2616342D 02	-0.1204784D 02
5	-0.2082929D 01	0.1807334D 01
6	-0.2082929D 01	-0.1807334D 01
7	-0.1138977D 01	0.1814974D 01
8	-0.1138977D 01	-0.1814974D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.8461474D 02	0.1382893D 03
12	-0.8461474D 02	-0.1382893D 03
13	-0.2625967D 02	0.1006682D 02
14	-0.2625967D 02	-0.1006682D 02
15	-0.2099674D 01	0.1819551D 01
16	-0.2099674D 01	-0.1819551D 01
17	-0.1138895D 01	0.1813825D 01
18	-0.1138895D 01	-0.1813825D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.8328463D 02	0.1396553D 03
22	-0.8328463D 02	-0.1396553D 03
23	-0.4839710D 02	0.0000000D 00
24	-0.6369037D 01	0.0000000D 00
25	-0.2457291D 01	0.2213793D 01
26	-0.2457291D 01	-0.2213793D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660000E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660000E 00	0.0000000E 00	0.5000000E 00

CD	OMGNT	OMGNS	ZETAS
17	0.6285000E 01	0.1634000E 03	0.5000000E 00

********** EIGENVALUES **********

24

NUMBER	REAL	IMAG
1	-0.8193159D 02	0.1413717D 03
2	-0.8193159D 02	-0.1413717D 03
3	-0.6639702D 00	0.7709996D 01
4	-0.6639702D 00	-0.7709996D 01
5	-0.2149854D 01	0.1616879D 01
6	-0.2149854D 01	-0.1616879D 01
7	-0.1083179D 01	0.1799444D 01
8	-0.1083179D 01	-0.1799444D 01
9	-0.2227324D-02	0.9650063D-01
10	-0.2227324D-02	-0.9650063D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8191436D 02	0.1413816D 03
14	-0.8191436D 02	-0.1413816D 03
15	-0.7168404D 00	0.7367076D 01
16	-0.7168404D 00	-0.7367076D 01
17	-0.2176083D 01	0.1610872D 01
18	-0.2176083D 01	-0.1610872D 01
19	-0.1083010D 01	0.1798421D 01
20	-0.1083010D 01	-0.1798421D 01
21	-0.2227987D-02	0.9649976D-01
22	-0.2227987D-02	-0.9649976D-01
23	-0.4264758D-01	0.4214550D 00
24	-0.4264758D-01	-0.4214550D 00
25	-0.8188262D 02	0.1414002D 03
26	-0.8188262D 02	-0.1414002D 03
27	-0.7195179D 00	0.6617909D 01
28	-0.7195179D 00	-0.6617909D 01
29	-0.2240359D 01	0.1586221D 01
30	-0.2240359D 01	-0.1586221D 01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 02	0.1634000E 03	0.5000000E 00

********** EIGENVALUES **********

25

NUMBER	REAL	IMAG
1	-0.8216318D 02	0.1412152D 03
2	-0.8216318D 02	-0.1412152D 03
3	-0.3477816D 01	0.9693851D 01
4	-0.3477816D 01	-0.9693851D 01
5	-0.2242449D 01	0.1773053D 01
6	-0.2242449D 01	-0.1773053D 01
7	-0.1087644D 01	0.1796856D 01
8	-0.1087644D 01	-0.1796856D 01
9	-0.2227322D-02	0.9650061D-01
10	-0.2227322D-02	-0.9650061D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8212859D 02	0.1412364D 03
14	-0.0212859D 02	-0.1412364D 03
15	-0.3529845D 01	0.9115618D 01
16	-0.3529845D 01	-0.9115618D 01
17	-0.2286780D 01	0.1782839D 01
18	-0.2286780D 01	-0.1782839D 01
19	-0.1087577D 01	0.1795709D 01
20	-0.1087577D 01	-0.1795709D 01
21	-0.4264341D-01	0.4214431D 00
22	-0.4264341D-01	-0.4214431D 00
23	-0.2227985D-02	0.9649974D-01
24	-0.2227985D-02	-0.9649974D-01
25	-0.8206493D 02	0.1412760D 03
26	-0.8206493D 02	-0.1412760D 03
27	-0.3510356D 01	0.7835304D 01
28	-0.3510356D 01	-0.7835304D 01
29	-0.2409705D 01	0.1804156D 01
30	-0.2409705D 01	-0.1804156D 01

CD	OMGNT	OMGNS	ZETAS
17	0.2514000E 02	0.1634000E 03	0.5000000E 00

********** EIGENVALUES **********

26

NUMBER	REAL	IMAG
1	-0.8261880D 02	0.1408390D 03
2	-0.8261880D 02	-0.1408390D 03
3	-0.9264719D 01	0.1056697D 02
4	-0.9264719D 01	-0.1056697D 02
5	-0.2282668D 01	0.1891735D 01
6	-0.2282668D 01	-0.1891735D 01
7	-0.1089902D 01	0.1795335D 01
8	-0.1089902D 01	-0.1795335D 01
9	-0.2227321D-02	0.9650060D-01
10	-0.2227321D-02	-0.9650060D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8254949D 02	0.1408870D 03
14	-0.8254949D 02	-0.1408870D 03
15	-0.9343057D 01	0.9408610D 01
16	-0.9343057D 01	-0.9408610D 01
17	-0.2335372D 01	0.1922774D 01
18	-0.2335372D 01	-0.1922774D 01
19	-0.1089881D 01	0.1794115D 01
20	-0.1089881D 01	-0.1794115D 01
21	-0.4264132D-01	0.4214372D 00
22	-0.4264132D-01	-0.4214372D 00
23	-0.2227985D-02	0.9649973D-01
24	-0.2227985D-02	-0.9649973D-01
25	-0.8242224D 02	0.1409770D 03
26	-0.8242224D 02	-0.1409770D 03
27	-0.9366126D 01	0.6515440D 01
28	-0.9366126D 01	-0.6515440D 01
29	-0.2481626D 01	0.2028327D 01
30	-0.2481626D 01	-0.2028327D 01

CD	OMGNT	OMGNS	ZETAS
17	0.6284999E 02	0.1634000E 03	0.5000000E 00

********** EIGENVALUES **********

27

NUMBER	REAL	IMAG
1	-0.8374276D 02	0.1391689D 03
2	-0.8374276D 02	-0.1391689D 03
3	-0.4282025D 02	0.0000000D 00
4	-0.1114410D 02	0.0000000D 00
5	-0.2294901D 01	0.1981271D 01
6	-0.2294901D 01	-0.1981271D 01
7	-0.1091257D 01	0.1794344D 01
8	-0.1091257D 01	-0.1794344D 01
9	-0.2227321D-02	0.9650059D-01
10	-0.2227321D-02	-0.9650059D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8357971D 02	0.1393385D 03
14	-0.8357971D 02	-0.1393385D 03
15	-0.4492319D 02	0.0000000D 00
16	-0.9388181D 01	0.0000000D 00
17	-0.2346146D 01	0.2032060D 01
18	-0.2346146D 01	-0.2032060D 01
19	-0.1091262D 01	0.1793078D 01
20	-0.1091262D 01	-0.1793078D 01
21	-0.2227984D-02	0.9649972D-01
22	-0.2227984D-02	-0.9649972D-01
23	-0.4264007D-01	0.4214337D 00
24	-0.4264007D-01	-0.4214337D 00
25	-0.8328463D 02	0.1396553D 03
26	-0.8328463D 02	-0.1396553D 03
27	-0.4839710D 02	0.0000000D 00
28	-0.6369037D 01	0.0000000D 00
29	-0.2457291D 01	0.2213793D 01
30	-0.2457291D 01	-0.2213793D 01

4. SYSTEM STABILITY AS A FUNCTION OF RATE GYRO DAMPING AND BANDWIDTH

The data that follows shows the IPS eigenvalue variation first as a function of rate gyro damping ratio (ζ_s) for the nominal natural frequency (ω_{ns}) of 163.4 rad/sec, and then as a function of rate gyro natural frequency keeping the damping ratio constant at 0.5 for zero and 60 degree telescope look angles.

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000005 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF RATE GYRO DAMPING AND BANDWIDTH

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.4999999E-02

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SYSTEM STABILITY AS A FUNCTION OF RATE GYRO DAMPING AND BANDWIDTH

********** EIGENVALUES **********

28

NUMBER	REAL	IMAG
1	0.2655222D 01	0.1591231D 03
2	0.2655222D 01	-0.1591231D 03
3	-0.1131470D 03	0.0000000D 00
4	-0.1501860D 02	0.0000000D 00
5	-0.2086280D 01	0.1830528D 01
6	-0.2086280D 01	-0.1830528D 01
7	-0.1139963D 01	0.1814354D 01
8	-0.1139963D 01	-0.1814354D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	0.2525985D 01	0.1592647D 03
12	0.2525985D 01	-0.1592647D 03
13	-0.1136529D 03	0.0000000D 00
14	-0.1422204D 02	0.0000000D 00
15	-0.2103196D 01	0.1844627D 01
16	-0.2103196D 01	-0.1844627D 01
17	-0.1139891D 01	0.1813171D 01
18	-0.1139891D 01	-0.1813171D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	0.9970044D 00	0.1610429D 03
22	0.9970044D 00	-0.1610429D 03
23	-0.1193486D 03	0.0000000D 00
24	-0.5173118D 01	0.0000000D 00
25	-0.2403131D 01	0.2315201D 01
26	-0.2403131D 01	-0.2315201D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	UMGNT	UMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.9999998E-02

********** EIGENVALUES **********

29

NUMBER	REAL	IMAG
1	0.1813030D 01	0.1590740D 03
2	0.1813030D 01	-0.1590740D 03
3	-0.1130747D 03	0.0000000D 00
4	-0.1504056D 02	0.0000000D 00
5	-0.2086267D 01	0.1830425D 01
6	-0.2086267D 01	-0.1830425D 01
7	-0.1139958D 01	0.1814357D 01
8	-0.1139959D 01	-0.1814357D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	0.1584101D 01	0.1592173D 03
12	0.1684101D 01	-0.1592173D 03
13	-0.1135841D 03	0.0000000D 00
14	-0.1424197D 02	0.0000000D 00
15	-0.2103182D 01	0.1844515D 01
16	-0.2103182D 01	-0.1844515D 01
17	-0.1139887D 01	0.1813174D 01
18	-0.1139887D 01	-0.1813174D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	0.1652538D 00	0.1610151D 03
22	0.1653538D 00	-0.1610151D 03
23	-0.1193151D 03	0.0000000D 00
24	-0.5176772D 01	0.0000000D 00
25	-0.2403418D 01	0.2214801D 01
26	-0.2403418D 01	-0.2214801D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E-01

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********** EIGENVALUES **********

29'

NUMBER	REAL	IMAG
1	-0.4937924D 01	0.1585292D 03
2	-0.4937924D 01	-0.1585292D 03
3	-0.1124654D 02	0.0000000D 00
4	-0.1522021D 02	0.0000000D 00
5	-0.2086163D 01	0.1829599D 01
6	-0.2086163D 01	-0.1829599D 01
7	-0.1139925D 01	0.1814379D 01
8	-0.1139925D 01	-0.1814379D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.5060619D 01	0.1586864D 03
12	-0.5060619D 01	-0.1586864D 03
13	-0.1130040D 03	0.0000000D 00
14	-0.1440487D 02	0.0000000D 00
15	-0.2103075D 01	0.1843621D 01
16	-0.2103075D 01	-0.1843621D 01
17	-0.1139852D 01	0.1813197D 01
18	-0.1139852D 01	-0.1813197D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.6494245D 01	0.1606440D 03
22	-0.6494245D 01	-0.1606440D 03
23	-0.1130338D 02	0.0000000D 00
24	-0.5206341D 01	0.0000000D 00
25	-0.2405699D 01	0.2311581D 01
26	-0.2405699D 01	-0.2311581D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	CMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634003E 02	0.9999996E-01

C.2

30

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.1341442D 02	0.1574648D 03
2	-0.1341442D 02	-0.1574648D 03
3	-0.1116175D 03	0.0000000D 00
4	-0.1545549D 02	0.0000000D 00
5	-0.2086031D 01	0.1828568D 01
6	-0.2086031D 01	-0.1828568D 01
7	-0.1139882D 01	0.1814407D 01
8	-0.1139882D 01	-0.1814407D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.1352767D 02	0.1576406D 03
12	-0.1352767D 02	-0.1576406D 03
13	-0.1121974D 03	0.0000000D 00
14	-0.1461767D 02	0.0000000D 00
15	-0.2102939D 01	0.1842506D 01
16	-0.2102939D 01	-0.1842506D 01
17	-0.1139809D 01	0.1813226D 01
18	-0.1139809D 01	-0.1813226D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.1483655D 02	0.1598064D 03
22	-0.1483655D 02	-0.1598064D 03
23	-0.1186457D 03	0.0000000D 00
24	-0.5244169D 01	0.0000000D 00
25	-0.2408517D 01	0.2307519D 01
26	-0.2408517D 01	-0.2307519D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.3000000E 00

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********** EIGENVALUES **********

31

NUMBER	REAL	IMAG
1	-0.4794847D 02	0.1487822D 03
2	-0.4794847D 02	-0.1487822D 03
3	-0.1068233D 03	0.0000000D 00
4	-0.1654304D 02	0.0000000D 00
5	-0.2085488D 01	0.1824466D 01
6	-0.2085488D 01	-0.1824466D 01
7	-0.1139710D 01	0.1814517D 01
8	-0.1139710D 01	-0.1814517D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.4799381D 02	0.1490438D 03
12	-0.4799381D 02	-0.1490438D 03
13	-0.1076514D 03	0.0000000D 00
14	-0.1559291D 02	0.0000000D 00
15	-0.2102375D 01	0.1838067D 01
16	-0.2102375D 01	-0.1838067D 01
17	-0.1139635D 01	0.1813342D 01
18	-0.1139635D 01	-0.1813342D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.4848829D 02	0.1521448D 03
22	-0.4848829D 02	-0.1521448D 03
23	-0.1165188D 02	0.0000000D 00
24	-0.5405373D 01	0.0000000D 00
25	-0.2419383D 01	0.2290862D 01
26	-0.2419383D 01	-0.2290862D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.8169999E 01	0.5000000E 00

********** EIGENVALUES **********

32

NUMBER	REAL	IMAG
1	-0.1256248D 03	0.0000000D 00
2	0.3050445D 01	0.9201625D 01
3	0.3050445D 01	-0.9201625D 01
4	-0.1000787D 02	0.0000000D 00
5	-0.1133552D 01	0.1820405D 01
6	-0.1133552D 01	-0.1820405D 01
7	-0.2022400D 01	0.1707038D 01
8	-0.2022400D 01	-0.1707038D 01
9	-0.1494054D-02	0.7902783D-01
10	-0.1494054D-02	-0.7902783D-01
11	-0.1256273D 03	0.0000000D 00
12	0.2974912D 01	0.9100952D 01
13	0.2974912D 01	-0.9100952D 01
14	-0.3832471D 01	0.0000000D 00
15	-0.2034576D 01	0.1712672D 01
16	-0.2034576D 01	-0.1712672D 01
17	-0.1133441D 01	0.1819471D 01
18	-0.1133441D 01	-0.1819471D 01
19	-0.1493936D-02	0.7902833D-01
20	-0.1493936D-02	-0.7902833D-01
21	-0.1256585D 03	0.0000000D 00
22	0.1661465D 01	0.7555430D 01
23	0.1661465D 01	-0.7555430D 01
24	-0.6959626D 01	0.0000000D 00
25	-0.2287400D 01	0.1812484D 01
26	-0.2287400D 01	-0.1812484D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 02	0.5000000E 00

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********** EIGENVALUES **********

33

NUMBER	REAL	IMAG
1	-0.1253794D 03	0.0000000D 00
2	0.1825288D 01	0.1497450D 02
3	0.1825288D 01	-0.1497450D 02
4	-0.1589123D 02	0.0000000D 00
5	-0.2060561D 01	0.1750214D 01
6	-0.2060561D 01	-0.1750214D 01
7	-0.1136242D 01	0.1817214D 01
8	-0.1136242D 01	-0.1817214D 01
9	-0.1494053D-02	0.7902783D-01
10	-0.1494053D-02	-0.7902783D-01
11	-0.1253902D 03	0.0000000D 00
12	0.1670903D 01	0.1482007D 02
13	0.1670903D 01	-0.1482007D 02
14	-0.1554427D 02	0.0000000D 00
15	-0.2075522D 01	0.1758288D 01
16	-0.2075522D 01	-0.1758288D 01
17	-0.1136140D 01	0.1816164D 01
18	-0.1136140D 01	-0.1816164D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.1255236D 03	0.0000000D 00
22	-0.1210818D 01	0.1255751D 02
23	-0.1210818D 01	-0.1255751D 02
24	-0.9252614D 01	0.0000000D 00
25	-0.2421060D 01	0.1945392D 01
26	-0.2421060D 01	-0.1945392D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.3267999E 02	0.5000000E 00

********** EIGENVALUES **********

34

NUMBER	REAL	IMAG
1	-0.1242512D 03	0.0000000D 00
2	-0.3591018D 01	0.2490201D 02
3	-0.3591018D 01	-0.2490201D 02
4	-0.2249240D 02	0.0000000D 00
5	-0.2076066D 01	0.1784828D 01
6	-0.2076066D 01	-0.1784828D 01
7	-0.1137961D 01	0.1815752D 01
8	-0.1137961D 01	-0.1815752D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.1243013D 03	0.0000000D 00
12	-0.3959480D 01	0.2472072D 02
13	-0.3959480D 01	-0.2472072D 02
14	-0.2167543D 02	0.0000000D 00
15	-0.2092279D 01	0.1795322D 01
16	-0.2092279D 01	-0.1795322D 01
17	-0.1137871D 01	0.1814638D 01
18	-0.1137871D 01	-0.1814638D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.1249133D 03	0.0000000D 00
22	-0.1026564D 02	0.2396833D 02
23	-0.1026564D 02	-0.2396833D 02
24	-0.8001882D 01	0.0000000D 00
25	-0.2466773D 01	0.2100133D 01
26	-0.2466773D 01	-0.2100133D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.8170000E 02	0.5000000E 00

********** EIGENVALUES **********

35

NUMBER	REAL	IMAG
1	-0.1138265D 03	0.0000000D 00
2	-0.3376162D 02	0.5735327D 02
3	-0.3376162D 02	-0.5735327D 02
4	-0.2157947D 02	0.0000000D 00
5	-0.2083113D 01	0.1810795D 01
6	-0.2083113D 01	-0.1810795D 01
7	-0.1139126D 01	0.1814904D 01
8	-0.1139126D 01	-0.1814904D 01
9	-0.1494053D-02	0.7902782D-01
10	-0.1494053D-02	-0.7902782D-01
11	-0.1143602D 03	0.0000000D 00
12	-0.2424224D 02	0.5788992D 02
13	-0.3424224D 02	-0.5788992D 02
14	-0.2005348D 02	0.0000000D 00
15	-0.2099859D 01	0.1823294D 01
16	-0.2099859D 01	-0.1823294D 01
17	-0.1139046D 01	0.1813750D 01
18	-0.1139046D 01	-0.1813750D 01
19	-0.1493935D-02	0.7902832D-01
20	-0.1493935D-02	-0.7902832D-01
21	-0.1199881D 03	0.0000000D 00
22	-0.3821991D 02	0.6415613D 02
23	-0.3821991D 02	-0.6415613D 02
24	-0.6074790D 01	0.0000000D 00
25	-0.2448644D 01	0.2229421D 01
26	-0.2448644D 01	-0.2229421D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1542000E 07	0.6944000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2903000E 04	0.2648000E 04	0.2605000E 04
5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1688999E 01
8	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
9	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
11	R120X	R120Y	R120Z
	0.4150000E 01	0.0000000E 00	0.6731000E 00
12	RE20X	RE20Y	RE20Z
	0.0000000E 03	0.0000000E 00	-0.3750000E 00
13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
14	SDX	SDY	SDZ
	0.1496000E 02	0.1496000E 02	0.2992000E 02
15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
17	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000000E 00
18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

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SYSTEM STABILITY AS A FUNCTION OF RATE GYRO DAMPING AND BANDWIDTH

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06
CD	A11	A12	A13
8	0.5000000E 00	0.0000500E 00	0.8660000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	-0.8660000E 00	0.0000000E 00	0.5000000E 00
CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.4999999E-02

********** EIGENVALUES **********

36

NUMBER	REAL	IMAG
1	0.1520174D 01	0.1604105D 03
2	0.1520174D 01	-0.1604105D 03
3	-0.1174472D 03	0.0000000D 00
4	-0.8127119D 01	0.0000000D 00
5	-0.2294045D 01	0.2039668D 01
6	-0.2294045D 01	-0.2039668D 01
7	-0.1092050D 01	0.1793734D 01
8	-0.1092050D 01	-0.1793734D 01
9	-0.2227320D-02	0.9650058D-01
10	-0.2227320D-02	-0.9650058D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	0.9970044D 00	0.1610429D 03
14	0.9970044D 00	-0.1610429D 03
15	-0.1193486D 03	0.0000000D 00
16	-0.5173118D 01	0.0000000D 00
17	-0.2403131D 01	0.2315201D 01
18	-0.2403131D 01	-0.2315201D 01
19	0.1335166D 01	0.1606337D 03
20	0.1335166D 01	-0.1606337D 03
21	-0.1181240D 03	0.0000000D 00
22	-0.7112946D 01	0.0000000D 00
23	-0.2339433D 01	0.2103086D 01
24	-0.2339433D 01	-0.2103086D 01
25	-0.1092069D 01	0.1792438D 01
26	-0.1092069D 01	-0.1792438D 01
27	-0.4263933D-01	0.4214316D 00
28	-0.4263933D-01	-0.4214316D 00
29	-0.2227984D-02	0.9649972D-01
30	-0.2227984D-02	-0.9649972D-01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.9999998E-02

********** EIGENVALUES **********

37

NUMBER	REAL	IMAG
1	0.6848478D 00	0.1603761D 03
2	0.6848478D 00	-0.1603761D 03
3	-0.1174026D 03	0.0000000D 00
4	-0.8135120D 01	0.0000000D 00
5	-0.2294064D 01	0.2039406D 01
6	-0.2294064D 01	-0.2039406D 01
7	-0.1092046D 01	0.1793736D 01
8	-0.1092046D 01	-0.1793736D 01
9	-0.2227320D-02	0.9650058D-01
10	-0.2227320D-02	-0.9650058D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	0.1653538D 00	0.1610151D 03
14	0.1653538D 00	-0.1610151D 03
15	-0.1193151D 03	0.0000000D 00
16	-0.5176772D 01	0.0000000D 00
17	-0.2403418D 01	0.2314801D 01
18	-0.2403418D 01	-0.2314801D 01
19	0.5011294D 00	0.1606017D 03
20	0.5011294D 00	-0.1606017D 03
21	-0.1180833D 03	0.0000000D 00
22	-0.7119420D 01	0.0000000D 00
23	-0.2339488D 01	0.2102771D 01
24	-0.2339488D 01	-0.2102771D 01
25	-0.1092065D 01	0.1792441D 01
26	-0.1092065D 01	-0.1792441D 01
27	-0.4263933D-01	0.4214316D 00
28	-0.4263933D-01	-0.4214316D 00
29	-0.2227984D-02	0.9649972D-01
30	-0.2227984D-02	-0.9649972D-01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E-01

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********** EIGENVALUES **********

38

NUMBER	REAL	IMAG
1	-0.6006290D 01	0.1599515D 03
2	-0.6006290D 01	-0.1599515D 03
3	-0.1170272D 03	0.0000000D 00
4	-0.8199981D 01	0.0000000D 00
5	-0.2294217D 01	0.2037314D 01
6	-0.2294217D 01	-0.2037314D 01
7	-0.1092019D 01	0.1793758D 01
8	-0.1092019D 01	-0.1793758D 01
9	-0.2227320D-02	0.9[illegible]D-01
10	-0.2227320D 02	-0.9[illegible]D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.6494245D 01	0.1606440D 03
14	-0.6494245D 01	-0.1606440D 03
15	-0.1190338D 03	0.0000000D 00
16	-0.5206341D 01	0.0000000D 00
17	-0.2405699D 01	0.2311581D 01
18	-0.2405699D 01	-0.2311581D 01
19	-0.6178920D 01	0.1601961D 03
20	-0.6178920D 01	-0.1601961D 03
21	-0.1177420D 03	0.0000000D 00
22	-0.7171840D 01	0.0000000D 00
23	-0.2339919D 01	0.2100251D 01
24	-0.2339919D 01	-0.2100251D 01
25	-0.1092037D 01	0.1792464D 01
26	-0.1092037D 01	-0.1792464D 01
27	-0.4263936D-01	0.4214317D 00
28	-0.4263936D-01	-0.4214317D 00
29	-0.2227984D-02	0.9649972D-01
30	-0.2227984D-02	-0.9649972D-01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.9999996E-01

********** EIGENVALUES **********

39

NUMBER	REAL	IMAG
1	-0.1439402D 02	0.1590447D 03
2	-0.1439402D 02	-0.1590447D 03
3	-0.1165981D 03	0.0000000D 00
4	-0.8283278D 01	0.0000000D 00
5	-0.2294393D 01	0.2034704D 01
6	-0.2294393D 01	-0.2034704D 01
7	-0.1091984D 01	0.1793785D 01
8	-0.1091984D 01	-0.1793785D 01
9	-0.2227320D-02	0.9650058D-01
10	-0.2227320D-02	-0.9650058D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1483655D 02	0.1598064D 03
14	-0.1483655D 02	-0.1598064D 03
15	-0.1186457D 03	0.0000000D 00
16	-0.5244169D 01	0.0000000D 00
17	-0.2408517D 01	0.2307519D 01
18	-0.2408517D 01	-0.2307519D 01
19	-0.1455062D 02	0.1593140D 03
20	-0.1455062D 02	-0.1593140D 03
21	-0.1172705D 03	0.0000000D 00
22	-0.7239025D 01	0.0000000D 00
23	-0.2340435D 01	0.2097102D 01
24	-0.2340435D 01	-0.2097102D 01
25	-0.1092002D 01	0.1792492D 01
26	-0.1092002D 01	-0.1792492D 01
27	-0.4263939D-01	0.4214318D 00
28	-0.4263939D-01	-0.4214318D 00
29	-0.2227984D-02	0.9649972D-01
30	-0.2227984D-02	-0.9649972D-01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.3000000E 00

********** EIGENVALUES **********

40

NUMBER	REAL	IMAG
1	-0.4832720D 02	0.1510784D 03
2	-0.4832720D 02	-0.1510784D 03
3	-0.1136401D 03	0.0000000D 00
4	-0.8644063D 01	0.0000000D 00
5	-0.2294947D 01	0.2024321D 01
6	-0.2294947D 01	-0.2024321D 01
7	-0.1091846D 01	0.1793893D 01
8	-0.1091846D 01	-0.1793893D 01
9	-0.2227320D-02	0.9650059D-01
10	-0.2227320D-02	-0.9650059D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.4848829D 02	0.1521448D 03
14	-0.4848829D 02	-0.1521448D 03
15	-0.1165188D 03	0.0000000D 00
16	-0.5405873D 01	0.0000000D 00
17	-0.2419383D 01	0.2290862D 01
18	-0.2419383D 01	-0.2290862D 01
19	-0.4838339D 02	0.1514568D 03
20	-0.4838339D 02	-0.1514568D 03
21	-0.1146727D 03	0.0000000D 00
22	-0.7527873D 01	0.0000000D 00
23	-0.2342259D 01	0.2084545D 01
24	-0.2342259D 01	-0.2084545D 01
25	-0.1091862D 01	0.1792605D 01
26	-0.1091862D 01	-0.1792605D 01
27	-0.4263952D-01	0.4214321D 00
28	-0.4263952D-01	-0.4214321D 00
29	-0.2227984D-02	0.9649972D-01
30	-0.2227984D-02	-0.9649972D-01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.8169999E 01	0.5000000E 00

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41

NUMBER	REAL	IMAG
1	-0.1256479D 02	0.0000000D 00
2	0.2240067D 01	0.8176698D 01
3	0.2240067D 01	-0.8176698D 01
4	-0.8166385D 01	0.0000000D 00
5	-0.2167214D 01	0.1769901D 01
6	-0.2167214D 01	-0.1769901D 01
7	-0.1086960D 01	0.1799405D 01
8	-0.1086960D 01	-0.1799405D 01
9	-0.2227324D-02	0.9650062D-01
10	-0.2227324D-02	-0.9650062D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1256513D 03	0.0000000D 00
14	0.2032649D 01	0.7994853D 01
15	0.2032649D 01	-0.7994853D 01
16	-0.7804667D 01	0.0000000D 00
17	-0.2200548D 01	0.1782327D 01
18	-0.2200548D 01	-0.1782327D 01
19	-0.1086902D 01	0.1798340D 01
20	-0.1086902D 01	-0.1798340D 01
21	-0.2227987D-02	0.9649975D-01
22	-0.2227987D-02	-0.9649975D-01
23	-0.4264667D-01	0.4214493D 00
24	-0.4264667D-01	-0.4214493D 00
25	-0.1256585D 03	0.0000000D 00
26	0.1661465D 01	0.7555430D 01
27	0.1661465D 01	-0.7555430D 01
28	-0.6959626D 01	0.0000000D 00
29	-0.2287400D 01	0.1812484D 01
30	-0.2287400D 01	-0.1812484D 01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 02	0.5000000E 00

********** EIGENVALUES **********

42

NUMBER	REAL	IMAG
1	-0.1254766D 03	0.0000000D 00
2	0.1052844D 00	0.1342070D 02
3	0.1052844D 00	-0.1342070D 02
4	-0.1207167D 02	0.0000000D 00
5	-0.2248186D 01	0.1849979D 01
6	-0.2248186D 01	-0.1849979D 01
7	-0.1089078D 01	0.1796475D 01
8	-0.1089078D 01	-0.1796475D 01
9	-0.2227322D-02	0.9650060D-01
10	-0.2227322D-02	-0.9650060D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1254930D 03	0.0000000D 00
14	-0.3147385D 00	0.1315349D 02
15	-0.3147385D 00	-0.1315349D 02
16	-0.1124600D 02	0.0000000D 00
17	-0.2294501D 01	0.1873410D 01
18	-0.2294501D 01	-0.1873410D 01
19	-0.1089048D 01	0.1795299D 01
20	-0.1089048D 01	-0.1795299D 01
21	-0.2227985D-02	0.9649973D-01
22	-0.2227985D-02	-0.9649973D-01
23	-0.4264277D-01	0.4214406D 00
24	-0.4264277D-01	-0.4214406D 00
25	-0.1255236D 03	0.0000000D 00
26	-0.1210818D 01	0.1255751D 02
27	-0.1210818D 01	-0.1255751D 02
28	-0.9252614D 01	0.0000000D 00
29	-0.2421060D 01	0.1945392D 01
30	-0.2421060D 01	-0.1945392D 01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.3267999E 02	0.5000000E 00

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********** EIGENVALUES **********

43

NUMBER	REAL	IMAG
1	-0.1246991D 03	0.0000000D 00
2	-0.7748681D 01	0.2367097D 02
3	-0.7748681D 01	-0.2367097D 02
4	-0.1340971D 02	0.0000000D 00
5	-0.2282535D 01	0.1926895D 01
6	-0.2282535D 01	-0.1926895D 01
7	-0.1090447D 01	0.1795091D 01
8	-0.1090447D 01	-0.1795091D 01
9	-0.2227321D-02	0.9650059D-01
10	-0.2227321D-02	-0.9650059D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.1247743D 03	0.0000000D 00
14	-0.8621133D 01	0.2370209D 02
15	-0.8621133D 01	-0.2370209D 02
16	-0.1161003D 02	0.0000000D 00
17	-0.2334086D 01	0.1965234D 01
18	-0.2334086D 01	-0.1965234D 01
19	-0.1090439D 01	0.1793857D 01
20	-0.1090439D 01	-0.1793857D 01
21	-0.2227985D-02	0.9649973D-01
22	-0.2227985D-02	-0.9649973D-01
23	-0.4264099D-01	0.4214361D 00
24	-0.4264099D-01	-0.4214361D 00
25	-0.1249133D 03	0.0000000D 00
26	-0.1026564D 02	0.2396833D 02
27	-0.1026564D 02	-0.2396833D 02
28	-0.8001882D 01	0.0000000D 00
29	-0.2466772D 01	0.2100133D 01
30	-0.2466773D 01	-0.2100133D 01

CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.8170000E 02	0.5000000E 00

********** EIGENVALUES **********

	NUMBER	REAL	IMAG
44	1	-0.1181762D 03	0.0000000D 00
	2	-0.3713911D 02	0.6206680D 02
	3	-0.3713911D 02	-0.6206680D 02
	4	-0.1014658D 02	0.0000000D 00
	5	-0.2294213D 01	0.1989900D 01
	6	-0.2294213D 01	-0.1989900D 01
	7	-0.1091378D 01	0.1794273D 01
	8	-0.1091378D 01	-0.1794273D 01
	9	-0.2227321D-02	0.9650059D-01
	10	-0.2227321D-02	-0.9650059D-01
	11	-0.2992000D 00	0.1077255D 01
	12	-0.2992000D 00	-0.1077255D 01
	13	-0.1199881D 03	0.0000000D 00
	14	-0.3821991D 02	0.6415613D 02
	15	-0.3821991D 02	-0.6415613D 02
	16	-0.6074790D 01	0.0000000D 00
	17	-0.2448644D 01	0.2229421D 01
	18	-0.2448644D 01	-0.2229421D 01
	19	-0.1188277D 03	0.0000000D 00
	20	-0.3753984D 02	0.6231880D 02
	21	-0.3753984D 02	-0.6231880D 02
	22	-0.8716247D 01	0.0000000D 00
	23	-0.2344585D 01	0.2042567D 01
	24	-0.2344585D 01	-0.2042567D 01
	25	-0.1091386D 01	0.1793002D 01
	26	-0.1091386D 01	-0.1793002D 01
	27	-0.2227984D-02	0.9649972D-01
	28	-0.2227984D-02	-0.9649972D-01
	29	-0.4263998D-01	0.4214334D 00
	30	-0.4263998D-01	-0.4214334D 00

5. SYSTEM STABILITY AS A FUNCTION OF TELESCOPE MASS AND INERTIA VARIATION

The data that follows shows IPS eigenvalue variations as a function of telescope mass and inertia variations for a pointing control loop bandwidth which is kept constant at 2 Hz. These studies were performed at zero and 60 degree telescope look angles.

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***** IOG INPUT PARAMETERS *****

CD 1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
CD 2	J1X	J1Y	J1Z
	0.1542000E 07	0.6944000E 07	0.7513000E 07
CD 3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
CD 4	J3X	J3Y	J3Z
	0.2903000E 04	0.2648000E 04	0.2605000E 04
CD 5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
CD 6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1688999E 01
CD 8	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
CD 9	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD 10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
CD 11	R120X	R120Y	R120Z
	0.4150000E 01	0.0000000E 00	0.6731000E 00
CD 12	RE20X	RE20Y	RE20Z
	0.2000000E 00	0.0000000E 00	-0.3730000E 00
CD 13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
CD 14	SDX	SDY	SDZ
	0.1496000E 02	0.1496000E 02	0.2992000E 02
CD 15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
CD 16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
CD 17	CNGNT	CNGNG	ZETHS
	0.1257000E 03	0.1574000E 03	0.5000000E 00
CD 18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
CD 19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

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SYSTEM STABILITY AS A FUNCTION OF TELESCOPE MASS AND INERTIA VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1334000E 06

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.2682993E 02
CD	J3X	J3Y	J3Z
4	0.2303000E 02	0.2648000E 02	0.2634993E 02
CD	CKRX	CKRY	CKRZ
18	0.2214000E 03	0.1972000E 03	0.2470000E 03
CD	CKPX	CKPY	CKPZ
19	0.7855993E 03	0.7000000E 03	0.8762994E 03
CD	CKIX	CKIY	CKIZ
20	0.1240000E 04	0.1105000E 04	0.1384000E 04

********** EIGENVALUES **********

201

NUMBER	REAL	IMAG
1	-0.8207478D 02	0.1400318D 03
2	-0.8207478D 02	-0.1400318D 03
3	-0.1218995D 03	0.0000000D 00
4	-0.5233725D 00	0.3015288D 01
5	-0.5233725D 00	-0.3015288D 01
6	-0.1045461D 01	0.1776132D 01
7	-0.1045461D 01	-0.1776132D 01
8	-0.5539262D-01	0.4815248D 00
9	-0.5539262D-01	-0.4815248D 00
10	-0.1993234D 01	0.0000000D 00
11	-0.8204179D 02	0.1401581D 03
12	-0.8204179D 02	-0.1401581D 03
13	-0.1222321D 03	0.0000000D 00
14	-0.4245471D 00	0.2944114D 01
15	-0.4245471D 00	-0.2944114D 01
16	-0.1043484D 01	0.1775321D 01
17	-0.1043484D 01	-0.1775321D 01
18	-0.1929222D 01	0.0000000D 00
19	-0.5530962D-01	0.4815494D 00
20	-0.5530962D-01	-0.4815494D 00
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586430D 01	0.0000000D 00
25	-0.2429542D 01	0.2273582D 01
26	-0.2429542D 01	-0.2273582D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.5416770D 00	0.1402216D 01
30	-0.5416770D 00	-0.1402216D 01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854007E 05	M2 0.1350000E 03	M3 0.5365050E 02
CD 4	JSX 0.5806000E 02	JSY 0.5367999E 02	JSZ 0.5203999E 02
CD 18	CKRX 0.4427998E 03	CKRY 0.3943599E 03	CKRZ 0.4040000E 03
CD 19	CKPX 0.1571070E 04	CKPY 0.1400000E 04	CKPZ 0.1749000E 04
CD 20	CKIX 0.2480000E 04	CKIY 0.2210000E 04	CKIZ 0.2760000E 04

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********** EIGENVALUES **********

202

NUMBER	REAL	IMAG
1	-0.8218917D 02	0.1396001D 03
2	-0.8218917D 02	-0.1396001D 03
3	-0.1207516D 03	0.0000000D 00
4	-0.8629983D 00	0.3220102D 01
5	-0.8629983D 00	-0.3220102D 01
6	-0.1066980D 01	0.1775192D 01
7	-0.1066980D 01	-0.1775192D 01
8	-0.4007050D-01	0.4104093D 00
9	-0.4007050D-01	-0.4104093D 00
10	-0.2207391D 01	0.0000000D 00
11	-0.8214493D 02	0.1397664D 03
12	-0.8214493D 02	-0.1397664D 03
13	-0.1211960D 03	0.0000000D 00
14	-0.7295402D 00	0.3163639D 01
15	-0.7295402D 00	-0.3163639D 01
16	-0.1064477D 01	0.1773519D 01
17	-0.1064477D 01	-0.1773519D 01
18	-0.2124925D 01	0.0000000D 00
19	-0.4000565D-01	0.4104247D 00
20	-0.4000565D-01	-0.4104247D 00
21	-0.8299903D 02	0.1367493D 03
22	-0.8299903D 02	-0.1367493D 03
23	-0.1126551D 03	0.0000000D 00
24	-0.5620351D 01	0.0000000D 00
25	-0.2413299D 01	0.2276215D 01
26	-0.2413299D 01	-0.2276215D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4833774D 00	0.1335205D 01
30	-0.4833774D 00	-0.1335205D 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.1342000E 03
CD	JIX	JIY	JIZ
4	0.1452000E 03	0.1324000E 03	0.1703000E 03
CD	CKRX	CKRY	CKRZ
18	0.1107000E 04	0.9960000E 02	0.1275000E 04
CD	CKPX	CKPY	CKPZ
19	0.3528000E 04	0.3500000E 04	0.4382000E 04
CD	CKIX	CKIY	CKIZ
20	0.6230300E 04	0.5525000E 04	0.6920000E 04

********** EIGENVALUES **********

203

NUMBER	REAL	IMAG
1	-0.8248586D 02	0.1385180D 03
2	-0.8248586D 02	-0.1385180D 03
3	-0.1177930D 03	0.0000000D 00
4	-0.1718412D 01	0.3324786D 01
5	-0.1718412D 01	-0.3324786D 01
6	-0.1098900D 01	0.1782279D 01
7	-0.1098900D 01	-0.1782279D 01
8	-0.2202318D-01	0.3042840D 00
9	-0.2202318D-01	-0.3042840D 00
10	-0.2801498D 01	0.0000000D 00
11	-0.8242220D 02	0.1387461D 03
12	-0.8242220D 02	-0.1387461D 03
13	-0.1184272D 03	0.0000000D 00
14	-0.1540239D 01	0.3354415D 01
15	-0.1540239D 01	-0.3354415D 01
16	-0.2658064D 01	0.0000000D 00
17	-0.1096915D 01	0.1779898D 01
18	-0.1096915D 01	-0.1779898D 01
19	-0.2199727D-01	0.3042875D 00
20	-0.2199727D-01	-0.3042875D 00
21	-0.8239862D 02	0.1267514D 03
22	-0.8239862D 02	-0.1267514D 03
23	-0.1120621D 03	0.0000000D 00
24	-0.5581241D 01	0.0000000D 00
25	-0.2429781D 01	0.2744487D 01
26	-0.2429781D 01	-0.2744487D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.3654485D 00	0.1179376D 01
30	-0.3654485D 00	-0.1179376D 01

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.2620990E 03

CD	JIX	JIY	JIZ
4	0.2902990E 03	0.2647990E 03	0.2605000E 03

CD	CKPX	CKPY	CKPZ
18	0.2214000E 04	0.1972000E 04	0.2470000E 04

CD	CKFX	CKFY	CKFZ
19	0.7850000E 04	0.7000000E 04	0.8764000E 04

CD	CKIX	CKIY	CKIZ
20	0.1240000E 05	0.1105000E 05	0.1284000E 05

204

MODE		
1	-0.3264500D 02	0.1270441D 02
2	-0.8237500D 02	-0.1711041D 02
3	-0.1148200D 03	0.0000000D 00
4	-0.4222437D 01	0.0000000D 00
5	-0.2478495D 01	0.2733875D 01
6	-0.2478455D 01	-0.2733875D 01
7	-0.1117945D 01	0.1792510D 01
8	-0.1117945D 01	-0.1792510D 01
9	-0.1262730D-01	0.2301880D 00
10	-0.1262730D-01	-0.2301880D 00
11	-0.8277938D 02	0.1374987D 02
12	-0.8277938D 02	0.1374987D 02
13	-0.1148867D 03	0.0000000D 00
14	-0.2378567D 01	0.2835486D 01
15	-0.2378567D 01	-0.2835486D 01
16	-0.3749521D 01	0.0000000D 00
17	-0.1116709D 01	0.1790092D 01
18	-0.1116709D 01	-0.1790092D 01
19	-0.1261752D-01	0.2301898D 00
20	-0.1261752D-01	-0.2301898D 00
21	-0.8299921D 02	0.1387495D 02
22	-0.8299921D 02	-0.1387495D 02
23	-0.1126562D 03	0.0000000D 00
24	-0.5586423D 01	0.0000000D 00
25	-0.2429544D 01	0.2273583D 01
26	-0.2429544D 01	-0.2273583D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.2600632D 00	0.1008578D 01
30	-0.2600632D 00	-0.1008578D 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1960000E 03	0.5365990E 03
CD	J1X	J1Y	J1Z
4	0.5805999E 03	0.5367998E 03	0.5210000E 03
CD	CKRX	CKRY	CKRZ
18	0.4420000E 04	0.3944000E 04	0.4944000E 04
CD	CKPX	CKPY	CKPZ
19	0.1571000E 05	0.1400000E 05	0.1749000E 05
CD	CKIX	CKIY	CKIZ
20	0.2480000E 05	0.2210000E 05	0.2768000E 05

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********** EIGENVALUES **********

205

NUMBER	REAL	IMAG
1	-0.9337244D 02	0.1355768D 03
2	-0.9337244D 02	-0.1355768D 03
3	-0.1090262D 03	0.0000000D 00
4	-0.8451730D 01	0.0000002D 00
5	-0.2332581D 01	0.2060907D 01
6	-0.2332581D 01	-0.2060907D 01
7	-0.1129708D 01	0.1802400D 01
8	-0.1129708D 01	-0.1802400D 01
9	-0.6871521D-02	0.1691617D 00
10	-0.6871521D-02	-0.1691617D 00
11	-0.8324525D 02	0.1359751D 03
12	-0.8324525D 02	-0.1359751D 03
13	-0.1102877D 02	0.0000000D 00
14	-0.7318058D 01	0.0000000D 00
15	-0.2398469D 01	0.2146012D 01
16	-0.2398469D 01	-0.2146012D 01
17	-0.1129020D 01	0.1795466D 01
18	-0.1129020D 01	-0.1795466D 01
19	-0.6828514D-02	0.1691629D 00
20	-0.6828514D-02	-0.1691629D 00
21	-0.8299302D 02	0.1367493D 03
22	-0.8299302D 02	-0.1367493D 03
23	-0.1126551D 02	0.0000000D 00
24	-0.5620344D 01	0.0000000D 00
25	-0.2417301D 01	0.2276216D 01
26	-0.2417301D 01	-0.2276216D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.1551865D 00	0.8135075D 00
30	-0.1551865D 00	-0.8135075D 00

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.1342000E 04

CD	J3X	J3Y	J3Z
4	0.1452000E 04	0.1324000E 04	0.1303000E 04

CD	CKRX	CKRY	CKRZ
18	0.1107000E 05	0.9060000E 04	0.1235000E 05

CD	CKPX	CKPY	CKPZ
19	0.3900000E 05	0.3500000E 05	0.4090000E 05

CD	CKIX	CKIY	CKIZ
20	0.6200000E 05	0.5525000E 05	0.6920000E 05

********** EIGENVALUES **********

206

NUMBER	REAL	IMAG
1	-0.8407741D 02	0.1335082D 03
2	-0.8407741D 02	-0.1335082D 03
3	-0.1019832D 03	0.0000000D 00
4	-0.1439895D 02	0.0000000D 00
5	-0.2141388D 01	0.1867304D 01
6	-0.2141388D 01	0.1867304D 01
7	-0.1137120D 01	0.1811104D 01
8	-0.1137120D 01	-0.1811104D 01
9	-0.2894602D-02	0.1100200D 00
10	-0.2894602D-02	-0.1100200D 00
11	-0.8395021D 02	0.1138668D 03
12	-0.8395021D 02	-0.1138668D 03
13	-0.1032769D 03	0.0000000D 00
14	-0.1331941D 02	0.0000000D 00
15	-0.2166458D 01	0.1888493D 01
16	-0.2166458D 01	-0.1888493D 01
17	-0.1136938D 01	0.1836870D 01
18	-0.1136938D 01	-0.1836870D 01
19	-0.2893494D-02	0.1100192D 00
20	-0.2893494D-02	-0.1100192D 00
21	-0.8299862D 02	0.1367514D 03
22	-0.8299862D 02	-0.1367514D 03
23	-0.1126621D 03	0.0000000D 00
24	-0.5561242D 01	0.0000000D 00
25	-0.2429780D 01	0.2274487D 01
26	-0.2429780D 01	-0.2274487D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.7932682D-01	0.5697911D 00
30	-0.7933682D-01	-0.5697911D 00

SYSTEM STABILITY AS A FUNCTION OF TELESCOPE MASS AND INERTIA VARIATIONS

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.5196000E 04
	J3X	**J3Y**	**J3Z**
CD			
4	0.5806000E 04	0.5296000E 04	0.5210000E 04
	CKRX	**CKRY**	**CKRZ**
CD			
18	0.4428000E 05	0.3944000E 05	0.4940000E 05
	CKPX	**CKPY**	**CKPZ**
CD			
19	0.1571000E 06	0.1400000E 06	0.1749000E 06
	CKIX	**CKIY**	**CKIZ**
CD			
20	0.2480000E 06	0.2210000E 06	0.2768000E 06

********** EIGENVALUES **********

207

NUMBER	REAL	IMAG
1	-0.8478159D 02	0.1316436D 03
2	-0.8478159D 02	-0.1316436D 03
3	-0.9463123D 02	0.0000000D 00
4	-0.2040570D 02	0.0000000D 00
5	-0.2057818D 01	0.1799416D 01
6	-0.2057818D 01	-0.1799416D 01
7	-0.1140738D 01	0.1816503D 01
8	-0.1140738D 01	-0.1816503D 01
9	-0.7755685D-03	0.5692952D-01
10	-0.7755685D-03	-0.5692952D-01
11	-0.8465439D 02	0.1319682D 03
12	-0.8465439D 02	-0.1319682D 03
13	-0.9604937D 02	0.0000000D 00
14	-0.1927629D 02	0.0000000D 00
15	-0.2071365D 01	0.1891107D 01
16	-0.2071365D 01	-0.1891107D 01
17	-0.1140703D 01	0.1815504D 01
18	-0.1140703D 01	-0.1815504D 01
19	-0.7754222D-03	0.5693370D-01
20	-0.7754222D-03	-0.5693370D-01
21	-0.8299901D 02	0.1357493D 03
22	-0.8299902D 02	-0.1357493D 03
23	-0.1126551D 03	0.0000000D 00
24	-0.5620345D 01	0.0000000D 00
25	-0.2413300D 01	0.2276217D 01
26	-0.2413300D 01	-0.2276217D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.2290743D-01	0.3082765D 00
30	-0.2290743D-01	-0.3082765D 00

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.1342000E 05
CD	J3X	J3Y	J3Z
4	0.1452000E 05	0.1324000E 05	0.1302000E 05
CD	CKRX	CKRY	CKRZ
18	0.1107000E 06	0.9860000E 05	0.1235000E 06
CD	CKPX	CKPY	CKPZ
19	0.3928000E 06	0.3500000E 06	0.4382000E 06
CD	CKIX	CKIY	CKIZ
20	0.6200000E 06	0.5525000E 06	0.6920000E 06

208

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.0498063D 02	0.1311493D 02
2	-0.5448062D 02	-0.1311493D 03
3	-0.5254078D 02	0.0000000D 00
4	-0.2217563D 02	0.0000000D 00
5	-0.2042700D 01	0.1780867D 01
6	-0.2042700D 01	-0.1780867D 01
7	-0.1141376D 01	0.1817660D 01
8	-0.1141376D 01	-0.1817660D 01
9	-0.3385076D-02	0.3759533D-01
10	-0.3385076D-02	-0.3759533D-01
11	-0.9485874D 02	0.1314870D 03
12	-0.9485870D 02	-0.1314520D 03
13	-0.9387296D 02	0.0000000D 00
14	-0.2106596D 02	0.0000000D 00
15	-0.2053683D 01	0.1735099D 01
16	-0.2053683D 01	-0.1795099D 01
17	-0.1141375D 01	0.1816754D 01
18	-0.1141375D 01	-0.1816754D 01
19	-0.3385408D-02	0.3760701D-01
20	-0.3385408D-03	-0.3760701D-01
21	-0.8296662D 02	0.1367514D 03
22	-0.8298862D 02	-0.1367514D 03
23	-0.1126621D 03	0.0040000D 00
24	-0.5581243D 01	0.0030000D 00
25	-0.2429780D 01	0.2274486D 01
26	-0.2425780D 01	-0.2274486D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.1015725D-01	0.2055923D 00
30	-0.1015725D-01	-0.2055923D 00

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1680999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E-03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF TELESCOPE MASS AND INERTIA VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M2
	0.8854000E 05	0.1950000E 03	0.2682999E 02
4	J3X	J3Y	J3Z
	0.2903000E 02	0.2648000E 02	0.2604999E 02
18	CKRX	CKRY	CKRZ
	0.2214000E 02	0.1972000E 03	0.2470000E 03
19	CKPX	CKPY	CKPZ
	0.7855999E 03	0.7000300E 03	0.8763999E 03
20	CKIX	CKIY	CKIZ
	0.1240000E 04	0.1105300E 04	0.1384000E 04

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8203166D 02	0.1401962D 03
2	-0.8203166D 02	-0.1401962D 03
3	-0.1223316D 03	0.0000000D 00
4	-0.4028393D 00	0.2892030D 01
5	-0.4028393D 00	-0.2892030D 01
6	-0.1026882D 01	0.1780325D 01
7	-0.1026882D 01	-0.1780325D 01
8	-0.6373213D-01	0.5153296D 00
9	-0.6373213D-01	-0.5153296D 00
10	-0.1908882D 01	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8199166D 02	0.1403492D 03
14	-0.8199166D 02	-0.1403492D 03
15	-0.1227314D 03	0.0000000D 00
16	-0.3227732D 00	0.2767108D 01
17	-0.3227732D 00	-0.2767108D 01
18	-0.1825711D 01	0.0000000D 00
19	-0.1025230D 01	0.1776814D 01
20	-0.1025230D 01	-0.1776814D 01
21	-0.6391555D-01	0.5152734D 00
22	-0.6391555D-01	-0.5152734D 00
23	-0.5332390D 00	0.1418494D 01
24	-0.5332390D 00	-0.1418494D 01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586430D 01	0.0000000D 00
29	-0.2423541D 01	0.2273582D 01
30	-0.2423541D 01	-0.2273582D 01

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.5365999E 02
CD	J3X	J3Y	J3Z
4	0.5806000E 02	0.5367999E 02	0.5209999E 02
CD	CKRX	CKRY	CKRZ
18	0.4427998E 03	0.1943999E 03	0.4940000E 03
CD	CKPX	CKPY	CKPZ
19	0.1571000E 04	0.1400000E 04	0.1749000E 04
CD	CKIX	CKIY	CKIZ
20	0.2430000E 04	0.2210000E 04	0.2763000E 04

210

NUMBER	REAL	IMAG
1	-0.8210525D 02	0.1739146D 01
2	-0.8210535D 02	-0.1739146D 01
3	-0.1713891D 01	0.0000000D 00
4	-0.6253884D 00	0.3060807D 01
5	-0.6253884D 00	-0.3060807D 01
6	-0.1038289D 01	0.1777594D 01
7	-0.1038289D 01	-0.1777594D 01
8	-0.4924384D-01	0.4543160D 00
9	-0.4924384D-01	-0.4543160D 00
10	-0.2051780D 01	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8204681D 02	0.1401352D 03
14	-0.8204681D 02	-0.1401352D 03
15	-0.1221702D 03	0.0000000D 00
16	-0.5157427D 00	0.2913888D 01
17	-0.5157427D 00	-0.2913888D 01
18	-0.1937398D 01	0.0000000D 00
19	-0.1076689D 01	0.1772732D 01
20	-0.1076689D 01	-0.1772732D 01
21	-0.4941076D-01	0.4542732D 00
22	-0.4941076D-01	-0.4542732D 00
23	-0.4700150D 00	0.1353649D 01
24	-0.4700150D 00	-0.1353649D 01
25	-0.8299903D 02	0.1367493D 03
26	-0.8299903D 02	-0.1367493D 03
27	-0.1126551D 03	0.0000000D 00
28	-0.5620351D 01	0.0000000D 00
29	-0.2412299D 01	0.2276215D 01
30	-0.2412299D 01	-0.2276215D 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.1342000E 03
CD	J3X	J3Y	J3Z
4	0.1452000E 02	0.1324000E 03	0.1302000E 03
CD	CKRX	CKRY	CKRZ
18	0.1107000E 04	0.9860000E 03	0.1235000E 04
CD	CKPX	CKPY	CKPZ
19	0.3928000E 04	0.3500000E 04	0.4382000E 04
CD	CKIX	CKIY	CKIZ
20	0.6200000E 04	0.5525000E 04	0.6920000E 04

********** EIGENVALUES **********

211

NUMBER	REAL	IMAG
1	-0.8229282D 02	0.1392142D 03
2	-0.8229282D 02	-0.1392142D 03
3	-0.1197095D 03	0.0000000D 00
4	-0.1185067D 01	0.3286919D 01
5	-0.1185067D 01	-0.3286919D 01
6	-0.1058246D 01	0.1777726D 01
7	-0.1058246D 01	-0.1777726D 01
8	-0.2944579D-01	0.3518148D 00
9	-0.2944579D-01	-0.3518148D 00
10	-0.2404164D 01	0.0000000D 00
11	-0.2992000D 00	0.1077253D 01
12	-0.2992000D 00	-0.1077253D 01
13	-0.8219225D 02	0.1395800D 03
14	-0.8219225D 02	-0.1395800D 03
15	-0.1206940D 03	0.0000000D 00
16	-0.9921228D 00	0.3154084D 01
17	-0.9921228D 00	-0.3154084D 01
18	-0.2221649D 01	0.0000000D 00
19	-0.1057615D 01	0.1772752D 01
20	-0.1057615D 01	-0.1772752D 01
21	-0.2953399D-01	0.3517959D 00
22	-0.2953399D-01	-0.3517959D 00
23	-0.3511444D 00	0.1192300D 01
24	-0.3511444D 00	-0.1192300D 01
25	-0.8299862D 02	0.1367514D 03
26	-0.8299862D 02	-0.1367514D 03
27	-0.1126621D 03	0.0000000D 00
28	-0.5581241D 01	0.0000000D 00
29	-0.2429781D 01	0.2274487D 01
30	-0.2429781D 01	-0.2274487D 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.2632998E 03
CD	J3X	J3Y	J3Z
4	0.2902998E 03	0.2647998E 03	0.2605000E 03
CD	CKRX	CKRY	CKRZ
18	0.2214000E 04	0.1972000E 04	0.2470000E 04
CD	CKPX	CKPY	CKPZ
19	0.7856000E 04	0.7000000E 04	0.8764000E 04
CD	CKIX	CKIY	CKIZ
20	0.1240000E 05	0.1105000E 05	0.1384000E 05

********** EIGENVALUES **********

212

NUMBER	REAL	IMAG
1	-0.82525990 02	0.13837340 03
2	-0.82525990 02	-0.13837340 03
3	-0.11739670 03	0.00000000 00
4	-0.18386290 01	0.32563300 01
5	-0.18386290 01	-0.32563300 01
6	-0.29105790 01	0.00000000 00
7	-0.10723180 01	0.17815990 01
8	-0.10723180 01	-0.17815990 01
9	-0.17709020-01	0.27268830 00
10	-0.17709020-01	-0.27268830 00
11	-0.29920000 00	0.10772550 01
12	-0.29920000 00	-0.10772550 01
13	-0.82939210 02	0.13674950 03
14	-0.82999210 02	-0.13674950 03
15	-0.11265620 03	0.00000000 00
16	-0.55864230 01	0.00000000 00
17	-0.24295440 01	0.22735830 01
18	-0.24295440 01	-0.22735830 01
19	-0.82377540 02	0.13889270 03
20	-0.82377540 02	-0.13889270 03
21	-0.11882460 03	0.00000000 00
22	-0.15500470 01	0.32315930 01
23	-0.15500470 01	-0.32315930 01
24	-0.10722010 01	0.17775940 01
25	-0.10722010 01	-0.17775940 01
26	-0.25047780 00	0.10150680 01
27	-0.25047780 00	-0.10150680 01
28	-0.17746360-01	0.27268300 00
29	-0.17746360-01	-0.27268300 00
30	-0.26055100 01	0.00000000 00

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***** IOG INPUT PARAMETERS *****

CD			
	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.5365999E 03
	J3X	J3Y	J3Z
4	0.5805999E 03	0.5367998E 03	0.5210000E 03
	CKRX	CKRY	CKRZ
18	0.4428000E 04	0.3944000E 04	0.4940000E 04
	CKPX	CKPY	CKPZ
19	0.1571000E 05	0.1400000E 05	0.1749000E 05
	CKIX	CKIY	CKIZ
20	0.2480000E 05	0.2210000E 05	0.2768000E 05

********** EIGENVALUES **********

213

NUMBER	REAL	IMAG
1	-0.8282330D 02	0.1373472D 03
2	-0.8282330D 02	-0.1373472D 03
3	-0.1144420D 03	0.0000000D 00
4	-0.4026567D 01	0.0000000D 00
5	-0.2430819D 01	0.2783450D 01
6	-0.2430819D 01	-0.2783450D 01
7	-0.1082214D 01	0.1786609D 01
8	-0.1082214D 01	-0.1786609D 01
9	-0.9837709D-02	0.2035396D 00
10	-0.9837709D-02	-0.2035396D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8299903D 02	0.1367493D 03
14	-0.8299903D 02	-0.1367493D 03
15	-0.1126551D 03	0.0000000D 00
16	-0.5620344D 01	0.0000000D 00
17	-0.2413301D 01	0.2276216D 01
18	-0.2413301D 01	-0.2276216D 01
19	-0.8262581D 02	0.1380074D 03
20	-0.8262581D 02	-0.1380074D 03
21	-0.1163427D 03	0.0000000D 00
22	-0.2172459D 01	0.3020684D 01
23	-0.2172459D 01	-0.3020684D 01
24	-0.3293028D 01	0.0000000D 00
25	-0.1082184D 01	0.1783424D 01
26	-0.1082184D 01	-0.1783424D 01
27	-0.9896422D-02	0.2035369D 00
28	-0.9896422D-02	-0.2035369D 00
29	-0.1606017D 00	0.8158396D 00
30	-0.1606017D 00	-0.8158396D 00

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.1342000E 04
CD	J3X	J3Y	J3Z
4	0.1452000E 04	0.1324000E 04	0.1303000E 04
CD	CKRX	CKRY	CKRZ
18	0.1107000E 05	0.9000000E 04	0.1235000E 05
CD	CKPX	CKPY	CKPZ
19	0.3928000E 05	0.3500000E 05	0.4382000E 05
CD	CKIX	CKIY	CKIZ
20	0.6200000E 05	0.5520000E 05	0.6920000E 05

********** EIGENVALUES **********

214

NUMBER	REAL	IMAG
1	-0.8321541D 02	0.1360669D 03
2	-0.8321541D 02	-0.1360669D 03
3	-0.1105725D 03	0.0000000D 00
4	-0.7127531D 01	0.0000000D 00
5	-0.2393981D 01	0.2147928D 01
6	-0.2393981D 01	-0.2147928D 01
7	-0.1089230D 01	0.1791744D 01
8	-0.1089230D 01	-0.1791744D 01
9	-0.4280020D-02	0.1338210D 00
10	-0.4280020D-02	-0.1338210D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8302315D 02	0.1366690D 03
14	-0.8302315D 02	-0.1366690D 03
15	-0.1124122D 03	0.0000000D 00
16	-0.5739013D 01	0.0000000D 00
17	-0.2455312D 01	0.2290070D 01
18	-0.2455312D 01	-0.2290070D 01
19	-0.1089299D 01	0.1790012D 01
20	-0.1089299D 01	-0.1790012D 01
21	-0.4282556D-02	0.1338235D 00
22	-0.4282556D-02	-0.1338235D 00
23	-0.7814763D-01	0.5701961D 00
24	-0.7814763D-01	-0.5701961D 00
25	-0.8299862D 02	0.1367514D 03
26	-0.8299862D 02	-0.1367514D 03
27	-0.1126621D 03	0.0000000D 00
28	-0.5581242D 01	0.0000000D 00
29	-0.2429780D 01	0.2274487D 01
30	-0.2429780D 01	-0.2274487D 01

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.5366000E 04
CD	J3X	J3Y	J3Z
4	0.5806000E 04	0.5296000E 04	0.5210000E 04
CD	CKRX	CKRY	CKRZ
18	0.4428000E 05	0.3944000E 05	0.4940000E 05
CD	CKPX	CKPY	CKPZ
19	0.1571000E 06	0.1400000E 06	0.1749000E 06
CD	CKIX	CKIY	CKIZ
20	0.2480000E 06	0.2210000E 06	0.2760000E 06

********** EIGENVALUES **********

215

NUMBER	REAL	IMAG
1	-0.8358337D 02	0.1349346D 03
2	-0.8358337D 02	-0.1349346D 03
3	-0.1069346D 03	0.0000000D 00
4	-0.1027664D 02	0.0000000D 00
5	-0.2246244D 01	0.1961925D 01
6	-0.2246244D 01	-0.1961925D 01
7	-0.1092982D 01	0.1795242D 01
8	-0.1092982D 01	-0.1795242D 01
9	-0.1160997D-02	0.6965684D-01
10	-0.1160997D-02	-0.6965684D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8299903D 02	0.1367493D 03
14	-0.8299903D 02	-0.1367493D 03
15	-0.1126551D 03	0.0000000D 00
16	-0.5620345D 01	0.0000000D 00
17	-0.2413300D 01	0.2276217D 01
18	-0.2413300D 01	-0.2276217D 01
19	-0.8345799D 02	0.1353067D 03
20	-0.8345799D 02	-0.1353067D 03
21	-0.1081501D 03	0.0000000D 00
22	-0.9316332D 01	0.0000000D 00
23	-0.2279969D 01	0.1994685D 01
24	-0.2279969D 01	-0.1994685D 01
25	-0.1092963D 01	0.1794229D 01
26	-0.1092963D 01	-0.1794229D 01
27	-0.1161227D-02	0.6965941D-01
28	-0.1161227D-02	-0.6965941D-01
29	-0.2280526D-01	0.3082948D 00
30	-0.2280526D-01	-0.3082948D 00

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.1342000E 05
CD	J3X	J3Y	J3Z
4	0.1452000E 05	0.1324000E 05	0.1070000E 05
CD	CKRX	CKRY	CKRZ
18	0.1107000E 06	0.9060200E 05	0.1235000E 06
CD	CKPX	CKPY	CKPZ
19	0.3928000E 06	0.3500000E 06	0.4382000E 06
CD	CKIX	CKIY	CKIZ
20	0.6200000E 06	0.5525000E 06	0.6920000E 06

********** EIGENVALUES **********

216

NUMBER	REAL	IMAG
1	-0.8368330D 02	0.1346381D 03
2	-0.8368330D 02	-0.1346381D 03
3	-0.1059430D 03	0.0000000D 00
4	-0.1111090D 02	0.0000000D 00
5	-0.2218801D 01	0.1933608D 01
6	-0.2218801D 01	-0.1933608D 01
7	-0.1093695D 01	0.1796016D 01
8	-0.1093695D 01	-0.1796016D 01
9	-0.5079612D-03	0.4605915D-01
10	-0.5079612D-03	-0.4605915D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8299862D 02	0.1367514D 03
14	-0.8299862D 02	-0.1367514D 03
15	-0.1126621D 03	0.0000000D 00
16	-0.5581243D 01	0.0000000D 00
17	-0.2429780D 01	0.2274486D 01
18	-0.2429780D 01	-0.2274486D 01
19	-0.8359221D 02	0.1349058D 03
20	-0.8359221D 02	-0.1349058D 03
21	-0.1068770D 03	0.0000000D 00
22	-0.1038309D 02	0.0000000D 00
23	-0.2242571D 01	0.1955720D 01
24	-0.2242571D 01	-0.1955720D 01
25	-0.1093657D 01	0.1795163D 01
26	-0.1093657D 01	-0.1795163D 01
27	-0.5079660D-03	0.4606866D-01
28	-0.5079660D-03	-0.4606866D-01
29	-0.1013845D-01	0.2055945D 00
30	-0.1013845D-01	-0.2055945D 00

6. SYSTEM STABILITY AS A FUNCTION OF IPS PEDESTAL MASS AND INERTIA VARIATIONS

The data that follows shows IPS eigenvalue variation as a function of pedestal mass and inertia variations. These studies were performed for a 60 degree telescope look angle only. The pointing control loop bandwidth was maintained at 2 Hz and the suspension characteristics remained constant.

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2682000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.3344000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF IPS PEDESTAL MASS AND INERTIA VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0 1240000E 06	0 1105000E 06	0 1384000E 06

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***** IOG INPUT PARAMETERS *****

CD			
1	M1 0.8854000E 05	M2 0.1950000E 02	M3 0.2683000E 04
CD			
3	J2X 0.5000000E 01	J2Y 0.5000000E 01	J2Z 0.5000000E 01
CD			
8	A11 0.5000000E 00	A12 0.0000000E 00	A13 0.8660000E 00
CD			
9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD			
10	A31 -0.8660000E 00	A32 0.0000000E 00	A33 0.5000000E 00

********** EIGENVALUES **********

14

NUMBER	REAL	IMAG
1	-0.8380046D 02	0.1346067D 02
2	-0.8380046D 02	-0.1346067D 02
3	-0.1061845D 03	0.0000000D 00
4	-0.1411049D 02	0.6820580D 01
5	-0.1411049D 02	-0.6820580D 01
6	-0.2081528D 01	0.1790958D 01
7	-0.2081528D 01	-0.1790958D 01
8	-0.2274691D-02	0.9750687D-01
9	-0.2274691D-02	-0.9750687D-01
10	-0.2322622D 01	0.0000000D 00
11	-0.2992000D 01	0.1883596D 01
12	-0.2992000D 01	-0.1883596D 01
13	-0.8371508D 02	0.1348278D 03
14	-0.8371508D 02	-0.1348278D 03
15	-0.1068931D 03	0.0000000D 00
16	-0.1392582D 02	0.6588871D 01
17	-0.1392582D 02	-0.6588871D 01
18	-0.2079919D 01	0.1781808D 01
19	-0.2079919D 01	-0.1781808D 01
20	-0.2322072D 01	0.0000000D 00
21	-0.2274842D-02	0.9750884D-01
22	-0.2274842D-02	-0.9750884D-01
23	-0.4527730D-01	0.4343583D 00
24	-0.4527730D-01	-0.4343583D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2423545D 01	0.2273587D 01
30	-0.2423545D 01	-0.2273587D 01

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.3900000E 02	0.3683000E 04

CD	J2X	J2Y	J2Z
3	0.1000000E 02	0.1000000E 02	0.1000000E 02

********** EIGENVALUES **********

15

NUMBER	REAL	IMAG
1	-0.83715610 02	0.1346700D 03
2	-0.83715610 02	-0.1346700D 03
3	-0.10617150 03	0.0000000D 00
4	-0.91852100 01	0.4522277D 01
5	-0.91852100 01	-0.4522277D 01
6	-0.2063956D 01	0.1786093D 01
7	-0.2063956D 01	-0.1786093D 01
8	-0.2269157D-02	0.9740333D-01
9	-0.2269157D-02	-0.9740333D-01
10	-0.2715793D 01	0.0000000D 00
11	-0.1496000D 01	0.2002993D 01
12	-0.1496000D 01	-0.2002993D 01
13	-0.8361842D 02	0.1349345D 03
14	-0.8361842D 02	-0.1349345D 03
15	-0.1070334D 03	0.0000000D 00
16	-0.8931630D 01	0.4530638D 01
17	-0.8931630D 01	-0.4530638D 01
18	-0.2712019D 01	0.0000000D 00
19	-0.2065141D 01	0.1781779D 01
20	-0.2065141D 01	-0.1781779D 01
21	-0.2269855D-02	0.9739510D-01
22	-0.2269855D-02	-0.9739510D-01
23	-0.4496772D-01	0.4328604D 00
24	-0.4496772D-01	-0.4328604D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.3586410D 01	0.0000000D 00
29	-0.2423545D 01	0.2273587D 01
30	-0.2423545D 01	-0.2273587D 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.9750000E 02	0.2683000E 04

CD	J2X	J2Y	J2Z
3	0.2500000E 02	0.2500000E 02	0.2500000E 02

********** EIGENVALUES **********

16

NUMBER	REAL	IMAG
1	-0.83590160 02	0.13494230 03
2	-0.83590160 02	-0.13494230 03
3	-0.10686380 03	0.00000000 00
4	-0.96290780 01	0.00000000 00
5	-0.27490880 01	0.21982570 01
6	-0.27490880 01	-0.21982570 01
7	-0.18592970 01	0.18176440 01
8	-0.18592970 01	-0.18176440 01
9	-0.20528550-02	0.97060550-01
10	-0.20528550-02	-0.97060550-01
11	-0.59840010 00	0.14635290 01
12	-0.59840010 00	-0.14635290 01
13	-0.83462120 02	0.13531210 03
14	-0.83462120 02	-0.13531210 03
15	-0.10818290 03	0.00000000 00
16	-0.87511510 01	0.00000000 00
17	-0.27888510 01	0.22252740 01
18	-0.27888510 01	-0.22252740 01
19	-0.18590740 01	0.18192420 01
20	-0.18590740 01	-0.18192420 01
21	-0.22517610-02	0.97060120-01
22	-0.22517610-02	-0.97060120-01
23	-0.44064770-01	0.42846200 00
24	-0.44064770-01	-0.42846200 00
25	-0.82999210 02	0.13674950 03
26	-0.82999210 02	-0.13674950 03
27	-0.11265620 03	0.00000000 00
28	-0.55864100 01	0.00000000 00
29	-0.24295450 01	0.22735870 01
30	-0.24295450 01	-0.22735870 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.3900000E 03	0.2683000E 04

CD	J2X	J2Y	J2Z
3	0.1000000E 03	0.1000000E 03	0.1000000E 03

********** EIGENVALUES **********

17

NUMBER	REAL	IMAG
1	-0.83213777D 02	0.13606123D 03
2	-0.83213777D 02	-0.13606123D 03
3	-0.11055350D 03	0.00000000D 00
4	-0.73334470D 01	0.00000000D 00
5	-0.23477000D 01	0.20806250D 01
6	-0.23477000D 01	-0.20806250D 01
7	-0.54501970D 00	0.13974430D 01
8	-0.54501930D 00	-0.13974430D 01
9	-0.21774800D-02	0.35412190D-01
10	-0.21774800D-02	-0.35412180D-01
11	-0.14960000D 00	0.77628590D 00
12	-0.14960000D 00	-0.77628590D 00
13	-0.83023200D 02	0.13656970D 03
14	-0.83023200D 02	-0.13656970D 03
15	-0.11241450D 03	0.00000000D 00
16	-0.57904180D 01	0.00000000D 00
17	-0.24261840D 01	0.22442450D 01
18	-0.24261840D 01	-0.22442450D 01
19	-0.54519150D 00	0.13972090D 01
20	-0.54519150D 00	-0.13972090D 01
21	-0.21781130D-02	0.35412470D-01
22	-0.21781130D-02	-0.35412470D-01
23	-0.40055410D-01	0.40829360D 00
24	-0.40055410D-01	-0.40829360D 00
25	-0.82999210D 02	0.13674950D 03
26	-0.82999210D 02	-0.13674950D 03
27	-0.11265620D 03	0.00000000D 00
28	-0.55864100D 01	0.00000000D 00
29	-0.24295450D 01	0.22735870D 01
30	-0.24295450D 01	-0.22735870D 01

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.9750000E 03	0.2683000E 04

CD	J2X	J2Y	J2Z
3	0.2500000E 03	0.2500000E 03	0.2500000E 03

********** EIGENVALUES **********

18

NUMBER	REAL	IMAG
1	-0.8282153D 02	0.1373453D 03
2	-0.8282153D 02	-0.1373453D 03
3	-0.1144317D 03	0.0000000D 00
4	-0.4164160D 01	0.0000000D 00
5	-0.2418609D 01	0.2642269D 01
6	-0.2418609D 01	-0.2642269D 01
7	-0.2171331D 00	0.9248482D 00
8	-0.2171331D 00	-0.9248482D 00
9	-0.2041090D-02	0.9226961D-01
10	-0.2041090D-02	-0.9226961D-01
11	-0.5983960D-01	0.4964061D 00
12	-0.5983996D-01	-0.4964061D 00
13	-0.8263574D 02	0.1379803D 03
14	-0.8263574D 02	-0.1379803D 03
15	-0.1162692D 03	0.0000000D 00
16	-0.2145318D 01	0.2994459D 01
17	-0.2145318D 01	-0.2994459D 01
18	-0.3294782D 01	0.0000000D 00
19	-0.2171090D 00	0.9248133D 00
20	-0.2171880D 00	-0.9248133D 00
21	-0.2041602D-02	0.9226954D-01
22	-0.2041602D-02	-0.9226954D-01
23	-0.3393074D-01	0.3757673D 00
24	-0.3393074D-01	-0.3757673D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1950000E 04	0.2683000E 04

CD	J2X	J2Y	J2Z
3	0.5000000E 03	0.5000000E 03	0.5000000E 03

********** EIGENVALUES **********

19

NUMBER	REAL	IMAG
1	-0.8252504D 02	0.1383724D 03
2	-0.8252504D 02	-0.1383724D 03
3	-0.1173816D 03	0.0000000D 00
4	-0.1862934D 01	0.3155389D 01
5	-0.1862934D 01	-0.3155389D 01
6	-0.2935067D 01	0.0000000D 00
7	-0.1084256D 00	0.6631122D 00
8	-0.1084256D 00	-0.6631122D 00
9	-0.1849355D-02	0.8791697D-01
10	-0.1849355D-02	-0.8791697D-01
11	-0.2992000D-01	0.3522851D 00
12	-0.2992000D-01	-0.3522851D 00
13	-0.8237930D 02	0.1388947D 03
14	-0.8237930D 02	-0.1388947D 03
15	-0.1188341D 03	0.0000000D 00
16	-0.1467776D 01	0.3227138D 01
17	-0.1467776D 01	-0.3227138D 01
18	-0.2984480D 01	0.0000000D 00
19	-0.1084469D 00	0.6631032D 00
20	-0.1084469D 00	-0.6631032D 00
21	-0.1849736D-02	0.8791713D-01
22	-0.1849736D-02	-0.8791713D-01
23	-0.2712382D-01	0.3359179D 00
24	-0.2712382D-01	-0.3359179D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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7. SYSTEM STABILITY AS A FUNCTION OF SUSPENSION NATURAL FREQUENCY VARIATION

The data that follows shows the IPS eigenvalue dependence as a function of suspension natural frequency variation keeping the suspension damping ratio constant. The pointing control loop bandwidth was also maintained constant at 2 Hz and the telescope look angle was at 60 degrees for all of the data shown.

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X .2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3700000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF SUSPENSION NATURAL FREQUENCY VARIATION

CD 20	CKIX 0.1240000E 06	CKIY 0.1105000E 06	CKIZ 0.1384000E 06
CD 8	A11 0.5000000E 00	A12 0.0000000E 00	A13 0.8660000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 -0.8660000E 00	A32 0.0000000E 00	A33 0.5000000E 00
CD 13	CDX 0.1895000E 02	CDY 0.1895000E 02	CDZ 0.1895000E 02
CD 14	SDX 0.4731000E 01	SDY 0.4731000E 01	SDZ 0.9462000E 01
CD 15	CKX 0.1250000E 02	CKY 0.1250000E 02	CKZ 0.1250000E 02
CD 16	SKX 0.3125000E 01	SKY 0.3125000E 01	SKZ 0.6250000E 01

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********** EIGENVALUES **********

7

NUMBER	REAL	IMAG
1	-0.8343545D 02	0.1353660D 03
2	-0.8343545D 02	-0.1353660D 03
3	-0.1083350D 03	0.0000000D 00
4	-0.9314349D 01	0.0000000D 00
5	-0.2259339D 01	0.1937440D 01
6	-0.2259339D 01	-0.1937440D 01
7	-0.3423741D 00	0.5782716D 00
8	-0.3423741D 00	-0.5782716D 00
9	-0.7052739D-03	0.3051598D-01
10	-0.7052739D-03	-0.3051598D-01
11	-0.9461999D-01	0.3406568D 00
12	-0.9461999D-01	-0.3406568D 00
13	-0.8327632D 02	0.1358580D 03
14	-0.8327632D 02	-0.1358580D 03
15	-0.1099058D 03	0.0000000D 00
16	-0.7994613D 01	0.0000000D 00
17	-0.2312349D 01	0.2009066D 01
18	-0.2312349D 01	-0.2009066D 01
19	-0.3423676D 00	0.5782651D 00
20	-0.3423676D 00	-0.5782651D 00
21	-0.7053142D-03	0.3051673D-01
22	-0.7053142D-03	-0.3051673D-01
23	-0.1359359D-01	0.1332420D 00
24	-0.1359359D-01	-0.1332420D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.4237999E 02	0.4237999E 02	0.4237999E 02

CD	SDX	SDY	SDZ
14	0.1058000E 02	0.1058000E 02	0.2115999E 02

CD	CKX	CKY	CKZ
15	0.6250000E 02	0.6250000E 02	0.6250000E 02

CD	SKX	SKY	SKZ
16	0.1563000E 02	0.1563000E 02	0.3125000E 02

********** EIGENVALUES **********

8

NUMBER	REAL	IMAG
1	-0.8343763D 02	0.1353686D 03
2	-0.8343763D 02	-0.1353686D 03
3	-0.1083503D 03	0.0000000D 00
4	-0.9162917D 01	0.0000000D 00
5	-0.2288757D 01	0.1959847D 01
6	-0.2288757D 01	-0.1959847D 01
7	-0.7644024D 00	0.1286398D 01
8	-0.7644024D 00	-0.1286398D 01
9	-0.1576610D-02	0.6824581D-01
10	-0.1576610D-02	-0.6824581D-01
11	-0.2115999D 00	0.7617253D 00
12	-0.2115999D 00	-0.7617253D 00
13	-0.8327708D 02	0.1358588D 03
14	-0.8327708D 02	-0.1358588D 03
15	-0.1099109D 03	0.0000000D 00
16	-0.7914389D 01	0.0000000D 00
17	-0.2336778D 01	0.2024749D 01
18	-0.2336778D 01	-0.2024749D 01
19	-0.7643305D 00	0.1286143D 01
20	-0.7643305D 00	-0.1286143D 01
21	-0.1576845D-02	0.6824591D-01
22	-0.1576845D-02	-0.6824591D-01
23	-0.3032062D-01	0.2979635D 00
24	-0.3032062D-01	-0.2979635D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.8475000E 02	0.8475000E 02	0.8475000E 02

CD	SDX	SDY	SDZ
14	0.2115999E 02	0.2115999E 02	0.4231000E 02

CD	CKX	CKY	CKZ
15	0.2500000E 03	0.2500000E 03	0.2500000E 03

CD	SKX	SKY	SKZ
16	0.6250000E 02	0.6250000E 02	0.1250000E 03

********** EIGENVALUES **********

9

NUMBER	REAL	IMAG
1	-0.8344157D 02	0.1353732D 03
2	-0.8344157D 02	-0.1353732D 03
3	-0.1083778D 03	0.0000000D 00
4	-0.8937388D 01	0.0000000D 00
5	-0.1732637D 01	0.2544154D 01
6	-0.1732637D 01	-0.2544154D 01
7	-0.2112788D 01	0.2081459D 01
8	-0.2112788D 01	-0.2081459D 01
9	-0.3142308D-02	0.1364731D 00
10	-0.3142308D-02	-0.1364731D 00
11	-0.4231000D 00	0.1523478D 01
12	-0.4231000D 00	-0.1523478D 01
13	-0.8327852D 02	0.1358604D 03
14	-0.8327852D 02	-0.1358604D 03
15	-0.1099205D 03	0.0000000D 00
16	-0.7788530D 01	0.0000000D 00
17	-0.1748130D 01	0.2531922D 01
18	-0.1748130D 01	-0.2531922D 01
19	-0.2151669D 01	0.2134754D 01
20	-0.2151669D 01	-0.2134754D 01
21	-0.3145420D-02	0.1364758D 00
22	-0.3145420D-02	-0.1364758D 00
23	-0.5932402D-01	0.5960598D 00
24	-0.5932402D-01	-0.5960598D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.1340000E 03	0.1340000E 03	0.1340000E 03

CD	SDX	SDY	SDZ
14	0.3345000E 02	0.3345000E 02	0.6689999E 02

CD	CKX	CKY	CKZ
15	0.6250000E 03	0.6250000E 03	0.6250000E 03

CD	SKX	SKY	SKZ
16	0.1563000E 03	0.1563000E 03	0.3125000E 03

********** EIGENVALUES **********

10

NUMBER	REAL	IMAG
1	-0.8344616D 02	0.1353786D 03
2	-0.8344616D 02	-0.1353786D 03
3	-0.1084097D 03	0.0000000D 00
4	-0.8852235D 01	0.0000000D 00
5	-0.2544702D 01	0.4411315D 01
6	-0.2544702D 01	-0.4411315D 01
7	-0.2133162D 01	0.1886258D 01
8	-0.2133162D 01	-0.1886258D 01
9	-0.4910855D-02	0.2158081D 00
10	-0.4910855D-02	-0.2158081D 00
11	-0.6690001D 00	0.2408825D 01
12	-0.6690001D 00	-0.2408825D 01
13	-0.8328028D 02	0.1358621D 03
14	-0.8328028D 02	-0.1358621D 03
15	-0.1099320D 03	0.0000000D 00
16	-0.7779458D 01	0.0000000D 00
17	-0.2541095D 01	0.4433773D 01
18	-0.2541095D 01	-0.4433773D 01
19	-0.2224294D 01	0.1850115D 01
20	-0.2224294D 01	-0.1850115D 01
21	-0.4928164D-02	0.2158159D 00
22	-0.4928164D-02	-0.2158159D 00
23	-0.8686790D-01	0.9410612D 00
24	-0.8686790D-01	-0.9410612D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.1895000E 03	0.1895000E 03	0.1895000E 03

CD	SDX	SDY	SDZ
14	0.4731000E 02	0.4731000E 02	0.9462000E 02

CD	CKX	CKY	CKZ
15	0.1250000E 04	0.1250000E 04	0.1250000E 04

CD	SKX	SKY	SKZ
16	0.1496000E 03	0.1496000E 03	0.2992000E 03

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********** EIGENVALUES **********

11 NUMBER	REAL	IMAG
1	-0.8345104D 02	0.1353847D 03
2	-0.8345104D 02	-0.1353847D 03
3	-0.1084434D 03	0.0000000D 00
4	-0.9250072D 01	0.0000000D 00
5	-0.3238903D 01	0.6236969D 01
6	-0.3238903D 01	-0.6236969D 01
7	-0.2131424D 01	0.1841289D 01
8	-0.2131424D 01	-0.1841289D 01
9	-0.7075240D-02	0.2138954D 00
10	-0.7075240D-02	-0.2138954D 00
11	-0.9461999D 00	0.2255816D 01
12	-0.9461999D 00	-0.2255816D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8328212D 02	0.1358641D 03
20	-0.8328212D 02	-0.1358641D 03
21	-0.1099440D 03	0.0000000D 00
22	-0.8192504D 01	0.0000000D 00
23	-0.3214597D 01	0.6250343D 01
24	-0.3214597D 01	-0.6250343D 01
25	-0.2329856D 01	0.1712617D 01
26	-0.2329856D 01	-0.1712617D 01
27	-0.7092084D-02	0.2139064D 00
28	-0.7092084D-02	-0.2139064D 00
29	-0.1032127D 00	0.1318188D 01
30	-0.1032127D 00	-0.1318188D 01

CD	CDX	CDY	CDZ
13	0.2680000E 03	0.2680000E 03	0.2680000E 03

CD	SDX	SDY	SDZ
14	0.6689999E 02	0.6689999E 02	0.1338000E 03

CD	CKX	CKY	CKZ
15	0.2500000E 04	0.2500000E 04	0.2500000E 04

CD	SKX	SKY	SKZ
16	0.6250000E 03	0.6250000E 03	0.1250000E 04

********** EIGENVALUES **********

12

NUMBER	REAL	IMAG
1	-0.8345865D 02	0.1353933D 03
2	-0.8345865D 02	-0.1353933D 03
3	-0.1084955D 03	0.0000000D 00
4	-0.4336036D 01	0.8844019D 01
5	-0.4336036D 01	-0.8844019D 01
6	-0.2208520D 01	0.1808211D 01
7	-0.2208520D 01	-0.1808211D 01
8	-0.8775252D-02	0.4313588D 00
9	-0.8775252D-02	-0.4313588D 00
10	-0.9419970D 01	0.0000000D 00
11	-0.1338000D 01	0.4817651D 01
12	-0.1338000D 01	-0.4817651D 01
13	-0.8328552D 02	0.1358669D 03
14	-0.8328552D 02	-0.1358669D 03
15	-0.1099658D 03	0.0000000D 00
16	-0.4310040D 01	0.8843332D 01
17	-0.4310040D 01	-0.8843332D 01
18	-0.8106711D 01	0.0000000D 00
19	-0.2687100D 01	0.1525426D 01
20	-0.2687100D 01	-0.1525426D 01
21	-0.9043011D-02	0.4314133D 00
22	-0.9043011D-02	-0.4314133D 00
23	-0.1084280D 00	0.1798222D 01
24	-0.1084280D 00	-0.1798222D 01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.5992999E 02	0.5992999E 02	0.5992999E 02

CD	SDX	SDY	SDZ
14	0.1496000E 02	0.1496000E 02	0.2992000E 02

CD	CKX	CKY	CKZ
15	0.1250000E 03	0.1250000E 03	0.1250000E 03

CD	SKX	SKY	SKZ
16	0.3125000E 02	0.3125000E 02	0.6250000E 02

********** EIGENVALUES **********

13

NUMBER	REAL	IMAG
1	-0.8343926D 02	0.1353705D 03
2	-0.8343926D 02	-0.1353705D 03
3	-0.1083617D 03	0.0000000D 00
4	-0.9058156D 01	0.0000000D 00
5	-0.2295264D 01	0.2014038D 01
6	-0.2295264D 01	-0.2014038D 01
7	-0.1091708D 01	0.1794001D 01
8	-0.1091708D 01	-0.1794001D 01
9	-0.2227321D-02	0.9650059D-01
10	-0.2227321D-02	-0.9650059D-01
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8327767D 02	0.1358595D 03
14	-0.8327767D 02	-0.1358595D 03
15	-0.1099148D 03	0.0000000D 00
16	-0.7854679D 01	0.0000000D 00
17	-0.2343709D 01	0.2072059D 01
18	-0.2343709D 01	-0.2072059D 01
19	-0.1091721D 01	0.1792718D 01
20	-0.1091721D 01	-0.1792718D 01
21	-0.2227984D-02	0.9649972D-01
22	-0.2227984D-02	-0.9649972D-01
23	-0.4263965D-01	0.4214325D 00
24	-0.4263965D-01	-0.4214325D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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8. SYSTEM STABILITY AS A FUNCTION OF SUSPENSION DAMPING

The data that follows shows the IPS eigenvalue dependence on the suspension damping characteristics. The suspension stiffness remained constant and the pointing control loop bandwidth was maintained at 2 Hz. The telescope look angle varied between 0, 10, 20, 40, 60 and 90 degrees.

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000F 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF SUSPENSION DAMPING

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06
CD	CDX	CDY	CDZ
13	0.0000000E 00	0.0000000E 00	0.0000000E 00
CD	SDX	SDY	SDZ
14	0.0000000E 00	0.0000000E 00	0.0000000E 00

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********** EIGENVALUES **********

1

NUMBER	REAL	IMAG
1	-0.8448839D 02	0.1323494D 03
2	-0.8448839D 02	-0.1323494D 03
3	-0.9753003D 02	0.0000000D 00
4	-0.1855796D 02	0.0000000D 00
5	-0.1850672D-02	0.2181131D 01
6	-0.1850672D-02	-0.2181131D 01
7	0.1449003D-05	0.7904183D-01
8	0.1449003D-05	-0.7904183D-01
9	-0.2015815D 01	0.1762703D 01
10	-0.2015815D 01	-0.1762703D 01
11	-0.8435908D 02	0.1326949D 03
12	-0.8435908D 02	-0.1326949D 03
13	-0.9889133D 02	0.0000000D 00
14	-0.1743013D 02	0.0000000D 00
15	-0.1921007D-02	0.2181543D 01
16	-0.1921007D-02	-0.2181543D 01
17	-0.2028317D 01	0.1773255D 01
18	-0.2028317D 01	-0.1773255D 01
19	0.1596416D-05	0.7904232D-01
20	0.1596416D-05	-0.7904232D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	0.1387779D-15	0.1118034D 01
28	0.1387779D-15	-0.1118034D 01
29	0.0000000D 00	0.4235315D 00
30	0.0000000D 00	-0.4235315D 00

CD	CDX	CDY	CDZ
13	0.0000000E 00	0.0000000E 00	0.0000000E 00

CD	SDX	SDY	SDZ
14	0.0000000E 00	0.0000000E 00	0.0000000E 00

CD	A11	A12	A13
8	0.9924040E 00	-0.7596117E-02	0.1227880E 00

CD	A21	A22	A23
9	-0.7596117E-02	0.9924040E 00	0.1227880E 00

CD	A31	A32	A33
10	-0.1227880E 00	-0.1227880E 00	0.9848080E 00

********** EIGENVALUES **********

2

NUMBER	REAL	IMAG
1	-0.8444943D 02	0.1224528D 03
2	-0.8444943D 02	-0.1224528D 03
3	-0.9432202D 02	0.1227951D 03
4	-0.8432203D 02	-0.1227951D 03
5	-0.9794153D 02	0.0000000D 00
6	-0.9927856D 02	0.0000000D 00
7	-0.1821705D 02	0.0000000D 00
8	-0.1710905D 02	0.0000000D 00
9	-0.2019479D 01	0.1765537D 01
10	-0.2019479D 01	-0.1765537D 01
11	-0.2032286D 01	0.1776306D 01
12	-0.2032286D 01	-0.1776306D 01
13	-0.1864951D-02	0.2180248D 01
14	-0.1864951D-02	-0.2180248D 01
15	-0.1935892D-02	0.2180662D 01
16	-0.1935892D-02	-0.2180662D 01
17	0.1776357D-14	0.1118034D 01
18	0.1776357D-14	-0.1118034D 01
19	0.8781284D-05	0.4235290D 00
20	0.8781284D-05	-0.4235290D 00
21	0.1471099D-05	0.7943972D-01
22	0.1471099D-05	-0.7943972D-01
23	0.1620767D-05	0.7943929D-01
24	0.1620767D-05	-0.7943929D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.0000000E 00	0.0000000E 00	0.0000000E 00

CD	SDX	SDY	SDZ
14	0.0000000E 00	0.0000000E 00	0.0000000E 00

CD	A11	A12	A13
8	0.9698460E 00	-0.3015370E-01	0.2418450E 00

CD	A21	A22	A23
9	-0.3015370E-01	0.9698460E 00	0.2418450E 00

CD	A31	A32	A33
10	-0.2418450E 00	-0.2418450E 00	0.9396930E 00

********** EIGENVALUES **********

3

NUMBE	REAL	IMAG
1	-0.8433701D 02	0.1327543D 03
2	-0.8433701D 02	-0.1327543D 03
3	-0.8421354D 02	0.1330913D 03
4	-0.8421354D 02	-0.1330913D 03
5	-0.9912112D 02	0.0000000D 00
6	-0.1004060D 03	0.0000000D 00
7	-0.1723976D 02	0.0000000D 00
8	-0.1617321D 02	0.0000000D 00
9	-0.2030741D 01	0.1774565D 01
10	-0.2030741D 01	-0.1774565D 01
11	-0.2044887D 01	0.1785875D 01
12	-0.2044887D 01	-0.1785875D 01
13	-0.1908101D-02	0.2177535D 01
14	-0.1908101D-02	-0.2177535D 01
15	-0.1980853D-02	0.2177954D 01
16	-0.1980853D-02	-0.2177954D 01
17	-0.3747003D-15	0.1118034D 01
18	-0.3747003D-15	-0.1118034D 01
19	0.3516082D-04	0.4235220D 00
20	0.3516082D-04	-0.4235220D 00
21	0.1540183D-05	0.8065832D-01
22	0.1540183D-05	-0.8065832D-01
23	0.1696660D-05	0.8066033D-01
24	0.1696660D-05	-0.8066033D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.0000000E 00	0.0000000E 00	0.0000000E 00
CD	SDX	SDY	SDZ
14	0.0000000E 00	0.0000000E 00	0.0000000E 00
CD	A11	A12	A13
8	0.8830220E 00	-0.1169780E 00	0.4545190E 00
CD	A21	A22	A23
9	-0.1169780E 00	0.8830220E 00	0.4545190E 00
CD	A31	A32	A33
10	-0.4545190E 00	-0.4545190E 00	0.7660440E 00

********** EIGENVALUES **********

4 NUMBER	REAL	IMAG
1	-0.8394121D 02	0.1338554D 03
2	-0.8394121D 02	-0.1338554D 03
3	-0.8382117D 02	0.1342022D 03
4	-0.8382117D 02	-0.1342022D 03
5	-0.1032012D 03	0.0000000D 00
6	-0.1044221D 03	0.0000000D 00
7	-0.1384988D 02	0.0000000D 00
8	-0.1281746D 02	0.0000000D 00
9	-0.2081459D 01	0.1819304D 01
10	-0.2081459D 01	-0.1819304D 01
11	-0.2106868D 01	0.1833283D 01
12	-0.2106868D 01	-0.1833283D 01
13	-0.2081471D-02	0.2165251D 01
14	-0.2081471D-02	-0.2165251D 01
15	-0.2161825D-02	0.2165678D 01
16	-0.2161825D-02	-0.2165678D 01
17	0.7327472D-14	0.1118034D 01
18	0.7327472D-14	-0.1118034D 01
19	0.1417285D-03	0.4234929D 00
20	0.1417285D-03	-0.4234929D 00
21	0.1848102D-05	0.8594235D-01
22	0.1848102D-05	-0.8594235D-01
23	0.2059385D-05	0.8594222D-01
24	0.2059385D-05	-0.8594222D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273567D 01
30	-0.2429545D 01	-0.2273587D 01

CD 13	CDX 0.0000000E 00	CDY 0.0000000E 00	CDZ 0.0000000E 00
CD 14	SDX 0.0000000E 00	SDY 0.0000000E 00	SDZ 0.0000000E 00
CD 8	A11 0.7500000E 00	A12 -0.2500000E 00	A13 0.6123720E 00
CD 9	A21 -0.2500000E 00	A22 0.7500000E 00	A23 0.6123720E 00
CD 10	A31 -0.6123720E 00	A32 -0.6123720E 00	A33 0.5000000E 00

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********** EIGENVALUES **********

5

NUMBER	REAL	IMAG
1	-0.8341126D 02	0.1354330D 02
2	-0.8341126D 02	-0.1354330D 02
3	-0.8229933D 02	0.1357826D 03
4	-0.8329933D 02	-0.1357826D 03
5	-0.1096653D 03	0.0000000D 00
6	-0.1085455D 03	0.0000000D 00
7	-0.9320314D 01	0.0000000D 00
8	-0.8299481D 01	0.0000000D 00
9	-0.2203785D 01	0.1944956D 01
10	-0.2203785D 01	-0.1944956D 01
11	-0.2266052D 01	0.1980600D 01
12	-0.2266052D 01	-0.1980600D 01
13	-0.2319969D-02	0.2138112D 01
14	-0.2319969D-02	-0.2138112D 01
15	-0.2412248D-02	0.2138549D 01
16	-0.2412248D-02	-0.2138549D 01
17	0.8229528D-14	0.1118034D 01
18	0.8229528D-14	-0.1118034D 01
19	0.3283597D-03	0.4234419D 00
20	0.3283597D-03	-0.4234419D 00
21	0.2411529D-05	0.9652412D-01
22	0.2411529D-05	-0.9652412D-01
23	0.3020834D-05	0.9652325D-01
24	0.3020834D-05	-0.9652325D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	CDX	CDY	CDZ
13	0.0000000E 00	0.0000000E 00	0.0000000E 00

CD	SDX	SDY	SDZ
14	0.0000000E 00	0.0000000E 00	0.0000000E 00

CD	A11	A12	A13
8	0.5000000E 00	-0.5000000E 00	0.7071069E 00

CD	A21	A22	A23
9	-0.5000000E 00	0.5000000E 00	0.7071069E 00

CD	A31	A32	A33
10	-0.7071069E 00	-0.7071069E 00	0.0000000E 00

********** EIGENVALUES **********

6

NUMBER	REAL	IMAG
1	-0.8257653D 02	0.1381899D 03
2	-0.8257653D 02	-0.1381899D 03
3	-0.8251439D 02	0.1384100D 03
4	-0.8251439D 02	-0.1384100D 03
5	-0.1168664D 03	0.0000000D 00
6	-0.1174873D 03	0.0000000D 00
7	-0.2008648D 01	0.3105952D 01
8	-0.2008648D 01	-0.3105952D 01
9	-0.1888875D 01	0.3208674D 01
10	-0.1888875D 01	-0.3208674D 01
11	-0.3064590D 01	0.0000000D 00
12	-0.2807342D 01	0.0000000D 00
13	0.2417913D-03	0.2011330D 01
14	0.2417913D-03	-0.2011330D 01
15	-0.4521136D-07	0.2012144D 01
16	-0.4521136D-07	-0.2012144D 01
17	0.2331468D-14	0.1118034D 01
18	0.2331468D-14	-0.1118034D 01
19	0.9120932D-03	0.4232813D 00
20	0.9120932D-03	-0.4232813D 00
21	0.1246223D-06	0.1353606D 00
22	0.1246223D-06	-0.1353606D 00
23	0.9994598D-05	0.1353605D 00
24	0.9994598D-05	-0.1353605D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF SUSPENSION DAMPING

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06
CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00
CD	CDX	CDY	CDZ
13	0.5993000E 00	0.5993000E 00	0.5993000E 00
CD	SDX	SDY	SDZ
14	0.1496000E 00	0.1496000E 00	0.2992000E 00

******** EIGENVALUES **********

45

NUMBER	REAL	IMAG
1	-0.8445260D 02	0.1324448D 03
2	-0.8445260D 02	-0.1324448D 03
3	-0.9791044D 02	0.0000000D 00
4	-0.1823912D 02	0.0000000D 00
5	-0.2019114D 01	0.1765757D 01
6	-0.2019114D 01	-0.1765757D 01
7	-0.1342402D-01	0.2180266D 01
8	-0.1342402D-01	-0.2180266D 01
9	-0.1363082D-04	0.7944028D-01
10	-0.1363082D-04	-0.7944028D-01
11	-0.2992000D-02	0.1118030D 01
12	-0.2992000D-02	-0.1118030D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8431900D 02	0.1328037D 03
20	-0.8431900D 02	-0.1328037D 03
21	-0.9931230D 02	0.0000000D 00
22	-0.1707666D 02	0.0000000D 00
23	-0.2032976D 01	0.1776698D 01
24	-0.2032976D 01	-0.1776698D 01
25	-0.1350574D-01	0.2180685D 01
26	-0.1350574D-01	-0.2180685D 01
27	-0.4207051D-03	0.4235288D 00
28	-0.4207051D-03	-0.4235288D 00
29	-0.1349121D-04	0.7944373D-01
30	-0.1349121D-04	-0.7944373D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

46

NUMBER	REAL	IMAG
1	-0.8434754D 02	0.1327263D 03
2	-0.8434754D 02	-0.1327263D 03
3	-0.9901326D 02	0.00000000D 00
4	-0.1732648D 02	0.00000000D 00
5	-0.2029057D 01	0.1774481D 01
6	-0.2029057D 01	-0.1774481D 01
7	-0.1344054D-01	0.2177545D 01
8	-0.1344054D-01	-0.2177545D 01
9	-0.1401160D-04	0.8066038D-01
10	-0.1401160D-04	-0.8066038D-01
11	-0.2992000D-02	0.1118030D 01
12	-0.2992000D-02	-0.1118030D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.00000000D 00
16	-0.5586410D 01	0.00000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8420299D 02	0.1331208D 03
20	-0.8420299D 02	-0.1331208D 03
21	-0.1005172D 03	0.00000000D 00
22	-0.1607562D 02	0.00000000D 00
23	-0.2047121D 01	0.1786651D 01
24	-0.2047121D 01	-0.1786651D 01
25	-0.1352477D-01	0.2177976D 01
26	-0.1352477D-01	-0.2177976D 01
27	-0.3927615D-03	0.4235212D 00
28	-0.3927615D-03	-0.4235212D 00
29	-0.1390352D-04	0.8066455D-01
30	-0.1390352D-04	-0.8066455D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8396402D 02	0.1337905D 03
2	-0.8396402D 02	-0.1337905D 03
3	-0.1029701D 03	0.0000000D 00
4	-0.1404233D 02	0.0000000D 00
5	-0.2076204D 01	0.1817123D 01
6	-0.2076204D 01	-0.1817123D 01
7	-0.134913SD-01	0.2165247D 01
8	-0.1349139D-01	-0.2165247D 01
9	-0.1570156D-04	0.8594288D-01
10	-0.1570156D-04	-0.8594288D-01
11	-0.2992000D-02	0.1118030D 01
12	-0.2992000D-02	-0.1118030D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429[5D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8379[76D 02	0.1342708D 03
20	-0.8379776D 02	-0.1342708D 03
21	-0.1046605D 03	0.0000000D 00
22	-0.1261005D 02	0.0000000D 00
23	-0.2113786D 01	0.1836677D 01
24	-0.2113786D 01	-0.1836677D 01
25	-0.1358629D-01	0.2165710D 01
26	-0.1358629D-01	-0.2165710D 01
27	-0.2798772D-03	0.4234910D 00
28	-0.2738772D-03	-0.4234910D 00
29	-0.1576925D-04	0.8594789D-01
30	-0.1576925D-04	-0.8594789D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

48

NUMBER	REAL	IMAG
1	-0.8343363D 02	0.1353640D 03
2	-0.8343363D 02	-0.1353640D 03
3	-0.1083224D 03	0.0000000D 00
4	-0.9515109D 01	0.0000000D 00
5	-0.2194095D 01	0.1937414D 01
6	-0.2194095D 01	-0.1937414D 01
7	-0.1344705D-01	0.2138083D 01
8	-0.1344705D-01	-0.2138083D 01
9	-0.1927483D-04	0.9652601D-01
10	-0.1927483D-04	-0.9652601D-01
11	-0.2997000D-02	0.1118070D 01
12	-0.2992000D-02	-0.1118070D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8327588D 02	0.1358567D 03
20	-0.8327588D 02	-0.1358567D 03
21	-0.1098999D 03	0.0000000D 00
22	-0.8082284D 01	0.0000000D 00
23	-0.2280354D 01	0.1992519D 01
24	-0.2280354D 01	-0.1992519D 01
25	-0.1356423D-01	0.2138594D 01
26	-0.1356423D-01	-0.2138594D 01
27	-0.8219570D-04	0.4234385D 00
28	-0.8219570D-04	-0.4234385D 00
29	-0.1995435D-04	0.9652697D-01
30	-0.1995435D-04	-0.9652697D-01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

49

NUMBER	REAL	IMAG
1	-0.8258800D 02	0.1381494D 03
2	-0.8258800D 02	-0.1381494D 03
3	-0.1167518D 03	0.0000000D 00
4	-0.2033608D 01	0.3085797D 01
5	-0.2033608D 01	-0.3085797D 01
6	-0.3105884D 01	0.0000000D 00
7	-0.9458825D-02	0.2011358D 01
8	-0.9458825D-02	-0.2011358D 01
9	-0.3432664D-04	0.1353607D 00
10	-0.3432664D-04	-0.1353607D 00
11	-0.2992000D-02	0.1118030D 01
12	-0.2992000D-02	-0.1118030D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8250198D 02	0.1384541D 03
20	-0.8250198D 02	-0.1384541D 03
21	-0.1176109D 03	0.0000000D 00
22	-0.1859485D 01	0.3224603D 01
23	-0.1859485D 01	-0.3224603D 01
24	-0.2770070D 01	0.0000000D 00
25	-0.9704169D-02	0.2012120D 01
26	-0.9704169D-02	-0.2012120D 01
27	0.5360290D-03	0.4232712D 00
28	0.5360290D-03	-0.4232712D 00
29	-0.4386470D-04	0.1353612D 00
30	-0.4386470D-04	-0.1353612D 00

CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01

********** EIGENVALUES **********

50

NUMBER	REAL	IMAG
1	-0.8448851D 02	0.1323495D 03
2	-0.8448851D 02	-0.1323495D 03
3	-0.9753123D 02	0.0000000D 00
4	-0.1855288D 02	0.0000000D 00
5	-0.1341829D-01	0.2181145D 01
6	-0.1341829D-01	-0.2181145D 01
7	-0.1350728D-04	0.7904183D-01
8	-0.1350728D-04	-0.7904183D-01
9	-0.2015938D 01	0.1762987D 01
10	-0.2015938D 01	-0.1762987D 01
11	-0.8435920D 02	0.1326951D 03
12	-0.8435920D 02	-0.1326951D 03
13	-0.9889242D 02	0.0000000D 00
14	-0.1742515D 02	0.0000000D 00
15	-0.1349919D-01	0.2181559D 01
16	-0.1349919D-01	-0.2181559D 01
17	-0.2028446D 01	0.1773558D 01
18	-0.2028446D 01	-0.1773558D 01
19	-0.1335845D-04	0.7904232D-01
20	-0.1335845D-04	-0.7904232D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.2992000D-02	0.1118030D 01
28	-0.2992000D-02	-0.1118030D 01
29	-0.4300071D-03	0.4235313D 00
30	-0.4300071D-03	-0.4235313D 00

***** IOG INPUT PARAMETERS *****

CD			
1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

C.3

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

CD	CDX	CDY	CDZ
13	0.1198999E 01	0.1198999E 01	0.1198999E 01

CD	SDX	SDY	SDZ
14	0.2992000E 00	0.2992000E 00	0.5984000E 00

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8445272D 02	0.1324450D 03
2	-0.8445272D 02	-0.1324450D 03
3	-0.9791161D 02	0.0000000D 00
4	-0.1823407D 02	0.0000000D 00
5	-0.2019242D 01	0.1766049D 01
6	-0.2019242D 01	-0.1766049D 01
7	-0.2499416D-01	0.2180215D 01
8	-0.2499416D-01	-0.2180215D 01
9	-0.2873605D-04	0.7944028D-01
10	-0.2873605D-04	-0.7944028D-01
11	-0.5983999D-02	0.1118018D 01
12	-0.5983999D-02	-0.1118018D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8431912D 02	0.1328039D 03
20	-0.8431912D 02	-0.1328039D 03
21	-0.9971333D 02	0.0000000D 00
22	-0.1707181D 02	0.0000000D 00
23	-0.2033103D 01	0.1777009D 01
24	-0.2033103D 01	-0.1777009D 01
25	-0.2508671D-01	0.2180636D 01
26	-0.2508671D-01	-0.2180636D 01
27	-0.8509838D-03	0.4235282D 00
28	-0.8509838D-03	-0.4235282D 00
29	-0.2859957D-04	0.7944372D-01
30	-0.2859957D-04	-0.7944372D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

52

NUMBER	REAL	IMAG
1	-0.8434765D 02	0.1327265D 03
2	-0.8434765D 02	-0.1327265D 03
3	-0.9901435D 02	0.0000000D 00
4	-0.1732159D 02	0.0000000D 00
5	-0.2029191D 01	0.1774783D 01
6	-0.2029191D 01	-0.1774783D 01
7	-0.2498425D-01	0.2177494D 01
8	-0.2498425D-01	-0.2177494D 01
9	-0.2958454D-04	0.8066038D-01
10	-0.2958454D-04	-0.8066038D-01
11	-0.5983999D-02	0.1118018D 01
12	-0.5983999D-02	-0.1118018D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8420309D 02	0.1331209D 03
20	-0.8420309D 02	-0.1331209D 03
21	-0.1005181D 03	0.0000000D 00
22	-0.1607117D 02	0.0000000D 00
23	-0.2047229D 01	0.1786973D 01
24	-0.2047229D 01	-0.1786973D 01
25	-0.2507955D-01	0.2177927D 01
26	-0.2507955D-01	-0.2177927D 01
27	-0.8229952D-03	0.4235208D 00
28	-0.8229952D-03	-0.4235208D 00
29	-0.2947815D-04	0.8066455D-01
30	-0.2947815D-04	-0.8066455D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

53

NUMBER	REAL	IMAG
1	-0.8396411D 02	0.1337907D 03
2	-0.8396411D 02	-0.1337907D 03
3	-0.1029708D 03	0.0000000D 00
4	-0.1403799D 02	0.0000000D 00
5	-0.2076362D 01	0.1817473D 01
6	-0.2076362D 01	-0.1817473D 01
7	-0.2491364D-01	0.2165196D 01
8	-0.2491364D-01	-0.2165196D 01
9	-0.3338138D-04	0.8594288D-01
10	-0.3338138D-04	-0.8594288D-01
11	-0.5983999D-02	0.1118018D 01
12	-0.5983999D-02	-0.1118018D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8379782D 02	0.1342709D 03
20	-0.8379782D 02	-0.1342709D 03
21	-0.1046610D 03	0.0000000D 00
22	-0.1260699D 02	0.0000000D 00
23	-0.2113805D 01	0.1837051D 01
24	-0.2113805D 01	-0.1837051D 01
25	-0.2502050D-01	0.2165660D 01
26	-0.2502050D-01	-0.2165660D 01
27	-0.7099284D-03	0.4234911D 00
28	-0.7099284D-03	-0.4234911D 00
29	-0.3345007D-04	0.8594788D-01
30	-0.3345007D-04	-0.8594788D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

54

NUMBER	REAL	IMAG
1	-0.8343369D 02	0.1353641D 03
2	-0.8343369D 02	-0.1353641D 03
3	-0.1083228D 03	0.0000000D 00
4	-0.9511648D 01	0.0000000D 00
5	-0.2194298D 01	0.1937888D 01
6	-0.2194298D 01	-0.1937888D 01
7	-0.2459023D-01	0.2138027D 01
8	-0.2459023D-01	-0.2138027D 01
9	-0.4157770D-04	0.9652600D-01
10	-0.4157770D-04	-0.9652600D-01
11	-0.5983999D-02	0.1118018D 01
12	-0.5983999D-02	-0.1118018D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8327590D 02	0.1358568D 03
20	-0.8327590D 02	-0.1358568D 03
21	-0.1099000D 03	0.0000000D 00
22	-0.8081275D 01	0.0000000D 00
23	-0.2280101D 01	0.1992980D 01
24	-0.2280101D 01	-0.1992980D 01
25	-0.2472079D-01	0.2138539D 01
26	-0.2472079D-01	-0.2138539D 01
27	-0.5119270D-03	0.4234396D 00
28	-0.5119270D-03	-0.4234396D 00
29	-0.4226001D-04	0.9652696D-01
30	-0.4226001D-04	-0.9652696D-01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

55

NUMBER	REAL	IMAG
1	-0.8258800D 02	0.1381491D 03
2	-0.8258800D 02	-0.1381494D 03
3	-0.1167518D 03	0.0000000D 00
4	-0.2033663D 01	0.3085597D 01
5	-0.2033663D 01	-0.3085597D 01
6	-0.3106116D 01	0.0000000D 00
7	-0.1914956D-01	0.2011288D 01
8	-0.1914956D-01	-0.2011288D 01
9	-0.7819069D-04	0.1353607D 00
10	-0.7819069D-04	-0.1353607D 00
11	-0.5983999D-02	0.1118018D 01
12	-0.5983999D-02	-0.1118018D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8250196D 02	0.1384540D 03
20	-0.8250196D 02	-0.1384540D 03
21	-0.1176108D 03	0.0000000D 00
22	-0.1859848D 01	0.3223311D 01
23	-0.1859848D 01	-0.3223311D 01
24	-0.2771421D 01	0.0000000D 00
25	-0.1941417D-01	0.2012050D 01
26	-0.1941417D-01	-0.2012050D 01
27	0.1073228D-03	0.4232754D 00
28	0.1073228D-03	-0.4232754D 00
29	-0.8773114D-04	0.1353612D 00
30	-0.8773114D-04	-0.1353612D 00

CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01

********** EIGENVALUES **********

56

NUMBER	REAL	IMAG
1	-0.84488630 02	0.1323497D 03
2	-0.84488630 02	-0.1323497D 03
3	-0.9752243D 02	0.00000000 00
4	-0.1854777D 02	0.60000000 00
5	-0.2499695D-01	0.2181095D 01
6	-0.2499695D-01	-0.2181095D 01
7	-0.2846135D-04	0.7904183D-01
8	-0.2846135D-04	-0.7904183D-01
9	-0.2016064D 01	0.1763276D 01
10	-0.2016064D 01	-0.1763276D 01
11	-0.8435931D 02	0.1326952D 03
12	-0.8435921D 02	-0.1326952D 03
13	-0.9883351D 02	0.0000000D 00
14	-0.1742016D 02	0.00000000 00
15	-0.2508857D-01	0.2181510D 01
16	-0.2508857D-01	-0.2181510D 01
17	-0.2028579D 01	0.1773865D 01
18	-0.2028579D 01	-0.1773865D 01
19	-0.2831438D-04	0.7904231D-01
20	-0.2831438D-04	-0.7904231D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.00000000 00
24	-0.5586410D 01	0.00000000 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.5983999D-02	0.1118018D 01
28	-0.5983999D-02	-0.1118018D 01
29	-0.8603008D-02	0.4235306D 00
30	-0.8603008D-02	-0.4235306D 00

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF SUSPENSION DAMPING

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06
CD	CDX	CDY	CDZ
13	0.5992999E 01	0.5992993E 01	0.5992999E 01
CD	SDX	SDY	SDZ
14	0.1495999E 01	0.1495995E 01	0.2992000E 01
CD	A11	A12	A13
8	0.9848030E 00	0.0000000E 00	0.1736480E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

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********** EIGENVALUES **********

57

NUMBER	REAL	IMAG
1	-0.8445366D 02	0.1324462D 03
2	-0.8445366D 02	-0.1324462D 03
3	-0.9792094D 02	0.0000000D 00
4	-0.1819323D 02	0.0000000D 00
5	-0.2020379D 01	0.1768519D 01
6	-0.2020379D 01	-0.1768519D 01
7	-0.1176099D 00	0.2177488D 01
8	-0.1176099D 00	-0.2177488D 01
9	-0.1495782D-03	0.7944015D-01
10	-0.1495782D-03	-0.7944015D-01
11	-0.2992000D-01	0.1117634D 01
12	-0.2992000D-01	-0.1117634D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8432000D 02	0.1328050D 03
20	-0.8432000D 02	-0.1328050D 03
21	-0.9932165D 02	0.0000000D 00
22	-0.1703251D 02	0.0000000D 00
23	-0.2034238D 01	0.1779639D 01
24	-0.2034238D 01	-0.1779639D 01
25	-0.1177938D 00	0.2177909D 01
26	-0.1177938D 00	-0.2177909D 01
27	-0.4290642D-02	0.4235076D 00
28	-0.4290642D-02	-0.4235076D 00
29	-0.1494437D-03	0.7944360D-01
30	-0.1494437D-03	-0.7944360D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

58

NUMBER	REAL	IMAG
1	-0.8434854D 02	0.1327276D 03
2	-0.8434854D 02	-0.1327276D 03
3	-0.9902287D 02	0.0000000D 00
4	-0.1728196D 02	0.0000000D 00
5	-0.2030376D 01	0.1777339D 01
6	-0.2030376D 01	-0.1777339D 01
7	-0.1173895D 00	0.2174772D 01
8	-0.1173895D 00	-0.2174772D 01
9	-0.1541671D-03	0.8066025D-01
10	-0.1541671D-03	-0.8066025D-01
11	-0.2992000D-01	0.1117634D 01
12	-0.2992000D-01	-0.1117634D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8420388D 02	0.1331219D 03
20	-0.8420388D 02	-0.1331219D 03
21	-0.1005252D 03	0.0000000D 00
22	-0.1603511D 02	0.0000000D 00
23	-0.2048221D 01	0.1789701D 01
24	-0.2048221D 01	-0.1789701D 01
25	-0.1175783D 00	0.2175205D 01
26	-0.1175783D 00	-0.2175205D 01
27	-0.4262318D-02	0.4235013D 00
28	-0.4262318D-02	-0.4235013D 00
29	-0.1540621D-03	0.8066442D-01
30	-0.1540621D-03	-0.8066442D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8396482D 02	0.1337916D 03
2	-0.8396482D 02	-0.1337916D 03
3	-0.1029768D 03	0.0000000D 00
4	-0.1400276D 02	0.0000000D 00
5	-0.2077769D 01	0.1820433D 01
6	-0.2077769D 01	-0.1820433D 01
7	-0.1163499D 00	0.2162494D 01
8	-0.1163499D 00	-0.2162494D 01
9	-0.1748182D-03	0.8594272D-01
10	-0.1748182D-03	-0.8594272D-01
11	-0.2992000D-01	0.1117634D 01
12	-0.2992000D-01	-0.1117634D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8379830D 02	0.1342715D 03
20	-0.8379830D 02	-0.1342715D 03
21	-0.1046648D 03	0.0000000D 00
22	-0.1258197D 02	0.0000000D 00
23	-0.2114115D 01	0.1840214D 01
24	-0.2114115D 01	-0.1840214D 01
25	-0.1165575D 00	0.2162958D 01
26	-0.1165575D 00	-0.2162958D 01
27	-0.4147891D-02	0.4234762D 00
28	-0.4147891D-02	-0.4234762D 00
29	-0.1748980D-03	0.8594772D-01
30	-0.1748980D-03	-0.8594772D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

60

NUMBER	REAL	IMAG
1	-0.8343414D 02	0.1[illegible]D 03
2	-0.8343414D 02	-0.1[illegible]D 03
3	-0.1083259D 03	0.0[illegible]D 00
4	-0.9483353D 01	0.0000000D 00
5	-0.2196122D 01	0.1941879D 01
6	-0.2196122D 01	-0.1941879D 01
7	-0.1137891D 00	0.2135357D 01
8	-0.1137891D 00	-0.2135357D 01
9	-0.2199973D-03	0.9652578D-01
10	-0.2199973D-03	-0.9652578D-01
11	-0.2992000D-01	0.1117634D 01
12	-0.2992000D-01	-0.1117634D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8327605D 02	0.1[illegible]D 03
20	-0.8327605D 02	-0.1[illegible]D 03
21	-0.1099010D 03	0.0[illegible]D 00
22	-0.8072530D 01	0.0[illegible]D 00
23	-0.2278299D 01	0.1[illegible]D 01
24	-0.2278299D 01	-0.1[illegible]D 01
25	-0.1140322D 00	0.2135866D 01
26	-0.1140322D 00	-0.2135866D 01
27	-0.3947494D-02	0.4234326D 00
28	-0.3947494D-02	-0.4234326D 00
29	-0.2206905D-03	0.9652674D-01
30	-0.2206905D-03	-0.9652674D-01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

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++++++++++ EIGENVALUES ++++++++++

NUMBER	REAL	IMAG
1	-0.8258796D 02	0.1381494D 02
2	-0.8258796D 02	-0.1381494D 02
3	-0.1167516D 03	0.0000000D 00
4	-0.2034094D 01	0.3883970D 01
5	-0.2034094D 01	-0.3883970D 01
6	-0.3107985D 01	0.0000000D 00
7	-0.9661844D-01	0.2009063D 01
8	-0.9661844D-01	-0.2009063D 01
9	-0.4290810D-03	0.1353601D 00
10	-0.4290810D-03	-0.1353601D 00
11	-0.2992000D-01	0.1117634D 01
12	-0.2992000D-01	-0.1117634D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8250175D 02	0.1384538D 03
20	-0.8250175D 02	-0.1384538D 03
21	-0.1176096D 03	0.0000000D 00
22	-0.1862696D 01	0.3212945D 01
23	-0.1862696D 01	-0.3212945D 01
24	-0.2782328D 01	0.0000000D 00
25	-0.9704169D-01	0.2009802D 01
26	-0.9704169D-01	-0.2009802D 01
27	-0.3320587D-02	0.4232932D 00
28	-0.3320587D-02	-0.4232932D 00
29	-0.4386411D-03	0.1353605D 00
30	-0.4386411D-03	-0.1353605D 00

CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01

********** EIGENVALUES **********

62

NUMBER	REAL	IMAG
1	-0.8448959D 02	0.1323510D 03
2	-0.8448959D 02	-0.1323510D 03
3	-0.3754205D 02	0.0000000D 00
4	-0.1850651D 02	0.0000000D 00
5	-0.1176804D 00	0.2178365D 01
6	-0.1176804D 00	-0.2178365D 01
7	-0.1480942D-03	0.7934170D-01
8	-0.1480942D-03	-0.7904170D-01
9	-0.2017185D 01	0.1765718D 01
10	-0.2017185D 01	-0.1765718D 01
11	-0.8436023D 02	0.1326964D 03
12	-0.8436023D 02	-0.1326964D 03
13	-0.9890227D 02	0.0000000D 00
14	-0.1737972D 02	0.0000000D 00
15	-0.1178625D 00	0.2178781D 01
16	-0.1178625D 00	-0.2178781D 01
17	-0.2029761D 01	0.1776464D 01
18	-0.2029761D 01	-0.1776464D 01
19	-0.1479548D-03	0.7904219D-01
20	-0.1479548D-03	-0.7904219D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.2992000D-01	0.1117634D 01
28	-0.2992000D-01	-0.1117634D 01
29	-0.4300073D-02	0.4235097D 00
30	-0.4300073D-02	-0.4235097D 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2682000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1500999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF SUSPENSION DAMPING

CD 20	CKIX 0.1243000E 06	CKIY 0.1105000E 06	CKIZ 0.1204000E 06
CD 13	CDX 0.1199000E 02	CDY 0.1199000E 02	CDZ 0.1199000E 02
CD 14	SDX 0.2992000E 01	SDY 0.2992000E 01	SDZ 0.5983995E 01
CD 8	A11 0.9848080E 00	A12 0.0000000E 00	A13 0.1736480E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 -0.1736480E 00	A32 0.0000000E 00	A33 0.9848080E 00

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********** EIGENVALUES **********

63

NUMBER	REAL	IMAG
1	-0.8445434D 02	0.1324478D 03
2	-0.8445484D 02	-0.1324478D 03
3	-0.9793266D 02	0.0000000D 00
4	-0.1814084D 02	0.0000000D 00
5	-0.2022145D 01	0.1771997D 01
6	-0.2022145D 01	-0.1771997D 01
7	-0.2337324D 00	0.2168147D 01
8	-0.2337324D 00	-0.2168147D 01
9	-0.3006483D-03	0.7943973D-01
10	-0.3006483D-03	-0.7943973D-01
11	-0.5983999D-01	0.1116431D 01
12	-0.5983999D-01	-0.1116431D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2275587D 01
18	-0.2429545D 01	-0.2275587D 01
19	-0.8421110D 02	0.1328065D 03
20	-0.8421110D 02	-0.1328065D 03
21	-0.9933260D 02	0.0000000D 00
22	-0.1608189D 02	0.0000000D 00
23	-0.2036028D 01	0.1783342D 01
24	-0.2036028D 01	-0.1783342D 01
25	-0.2340408D 00	0.2168544D 01
26	-0.2340408D 00	-0.2168544D 01
27	-0.8593465D-02	0.4234425D 00
28	-0.8593465D-02	-0.4234425D 00
29	-0.3005329D-03	0.7944318D-01
30	-0.3005329D-03	-0.7944318D-01

CD	A11	A12	A13
8	0.9296930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

64

NUMBER	REAL	IMAG
1	-0.8434967D 02	0.1327291D 03
2	-0.8434967D 02	-0.1327291D 03
3	-0.9303358D 02	0.0000000D 00
4	-0.1723108D 02	0.0000000D 00
5	-0.2032219D 01	0.1780936D 01
6	-0.2032219D 01	-0.1780936D 01
7	-0.2332495D 00	0.2165450D 01
8	-0.2332495D 00	-0.2165450D 01
9	-0.3099171D-03	0.8065981D-01
10	-0.3099171D-03	-0.8065981D-01
11	-0.5983993D-01	0.1116431D 01
12	-0.5983993D-01	-0.1116431D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8420487D 02	0.1331232D 03
20	-0.8420487D 02	-0.1331232D 03
21	-0.1005342D 03	0.0000000D 00
22	-0.1598860D 02	0.0000000D 00
23	-0.2049047D 01	0.1793539D 01
24	-0.2049847D 01	-0.1793529D 01
25	-0.2335657D 00	0.2165858D 01
26	-0.2335657D 00	-0.2165858D 01
27	-0.8564780D-02	0.4234377D 00
28	-0.8564780D-02	-0.4234377D 00
29	-0.3098611D-03	0.8066398D-01
30	-0.3098611D-03	-0.8066398D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8396572D 02	0.1337927D 03
2	-0.8396572D 02	-0.1337927D 03
3	-0.1029842D 03	0.0000000D 00
4	-0.1395725D 02	0.0000000D 00
5	-0.2079960D 01	0.1824582D 01
6	-0.2079960D 01	-0.1824582D 01
7	-0.2309968D 00	0.2153260D 01
8	-0.2309968D 00	-0.2153260D 01
9	-0.3516370D-03	0.8594219D-01
10	-0.3516370D-03	-0.8594219D-01
11	-0.5983999D-01	0.1116431D 01
12	-0.5983999D-01	-0.1116431D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8379891D 02	0.1342722D 03
20	-0.8379891D 02	-0.1342722D 03
21	-0.1046696D 03	0.0000000D 00
22	-0.1254914D 02	0.0000000D 00
23	-0.2114967D 01	0.1844653D 01
24	-0.2114967D 01	-0.1844653D 01
25	-0.2313412D 00	0.2153694D 01
26	-0.2313412D 00	-0.2153694D 01
27	-0.8448896D-02	0.4234184D 00
28	-0.8448896D-02	-0.4234184D 00
29	-0.3517241D-03	0.8594720D-01
30	-0.3517241D-03	-0.8594720D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

66

NUMBER	REAL	IMAG
1	-0.8343470D 02	0.1353653D 03
2	-0.8343470D 02	-0.1353653D 03
3	-0.1083298D 03	0.0000000D 00
4	-0.9446261D 01	0.0000000D 00
5	-0.2198994D 01	0.1947431D 01
6	-0.2198994D 01	-0.1947431D 01
7	-0.2256110D 00	0.2126342D 01
8	-0.2256110D 00	-0.2126342D 01
9	-0.4430439D-03	0.9652505D-01
10	-0.4430439D-02	-0.9652505D-01
11	-0.5983999D-01	0.1116431D 01
12	-0.5983999D-01	-0.1116431D 01
13	-0.8327624D 02	0.1358572D 03
14	-0.8327624D 02	-0.1358572D 03
15	-0.1099023D 03	0.0000000D 00
16	-0.8059752D 01	0.0000000D 00
17	-0.2276698D 01	0.2002423D 01
18	-0.2276698D 01	-0.2002423D 01
19	-0.2260053D 00	0.2126814D 01
20	-0.2260053D 00	-0.2126814D 01
21	-0.4437529D-03	0.9652589D-01
22	-0.4437529D-02	-0.9652589D-01
23	-0.8245933D-02	0.4233849D 00
24	-0.8245933D-02	-0.4233849D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

67

NUMBER	REAL	IMAG
1	-0.8258792D 02	0.1381494D 03
2	-0.8258792D 02	-0.1381494D 03
3	-0.1167513D 03	0.0000000D 00
4	-0.2034620D 01	0.3081852D 01
5	-0.2034620D 01	-0.3081852D 01
6	-0.3110365D 01	0.0000000D 00
7	-0.1935137D 00	0.2002091D 01
8	-0.1935137D 00	-0.2002091D 01
9	-0.8677416D-03	0.1353582D 00
10	-0.8677416D-03	-0.1353582D 00
11	-0.5983999D-01	0.1116431D 01
12	-0.5983999D-01	-0.1116431D 01
13	-0.8773073D-03	0.1353584D 00
14	-0.8773073D-03	-0.1353584D 00
15	-0.1941418D 00	0.2002756D 01
16	-0.1941418D 00	-0.2002756D 01
17	-0.8299921D 02	0.1367495D 03
18	-0.8299921D 02	-0.1367495D 03
19	-0.1126562D 03	0.0000000D 00
20	-0.5586410D 01	0.0000000D 00
21	-0.2429545D 01	0.2273587D 01
22	-0.2429545D 01	-0.2273587D 01
23	-0.8250148D 02	0.1384535D 03
24	-0.8250148D 02	-0.1384535D 03
25	-0.1176082D 03	0.0000000D 00
26	-0.1866113D 01	0.3199889D 01
27	-0.1866119D 01	-0.3199889D 01
28	-0.2796248D 01	0.0000000D 00
29	-0.7610784D-02	0.4232771D 00
30	-0.7610784D-02	-0.4232771D 00

CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01

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********** EIGENVALUES **********

68

NUMBER	REAL	IMAG
1	-0.8449079D 02	0.1323526D 03
2	-0.8449079D 02	-0.1323526D 03
3	-0.9753414D 02	0.0000000D 00
4	-0.1845360D 02	0.0000000D 00
5	-0.2338872D 00	0.2169018D 01
6	-0.2338872D 00	-0.2169018D 01
7	-0.2018927D 01	0.1769159D 01
8	-0.2018927D 01	-0.1769159D 01
9	-0.2976526D-03	0.7904129D-01
10	-0.2976526D-03	-0.7904129D-01
11	-0.8436138D 02	0.1326979D 03
12	-0.8436138D 02	-0.1326979D 03
13	-0.9851327D 02	0.0000000D 00
14	-0.1732779D 02	0.0000000D 00
15	-0.2341928D 00	0.2169410D 01
16	-0.2341928D 00	-0.2169410D 01
17	-0.2031604D 01	0.1780123D 01
18	-0.2031604D 01	-0.1780123D 01
19	-0.2975396D-03	0.7904178D-01
20	-0.2975396D-03	-0.7904178D-01
21	-0.8299821D 02	0.1267495D 03
22	-0.8299821D 02	-0.1267495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5566410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.5983999D-01	0.1116431D 01
28	-0.5983999D-01	-0.1116431D 01
29	-0.8603014D-02	0.4234441D 00
30	-0.8603014D-02	-0.4234441D 00

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2682000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2983000E 04	J3Y 0.2648000E 04	J3Z 0.2005000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1608999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF SUSPENSION DAMPING

CD 20	CKIX 0.1240000E 06	CKIY 0.1105000E 06	CKIZ 0.1384000E 06
CD 13	CDX 0.2996999E 02	CDY 0.2996999E 02	CDZ 0.2996999E 02
CD 14	SDX 0.7190000E 01	SDY 0.7480000E 01	SDZ 0.1456000E 02
CD 8	A11 0.9848080E 00	A12 0.0000000E 00	A13 0.1736480E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 -0.1736480E 00	A32 0.0000000E 00	A33 0.9848080E 00

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EIGENVALUES OF A(1,1)

NUMBER	REAL	IMAG
1	-0.84458420D 02	0.13215250D 02
2	-0.84458420D 02	-0.13215250D 02
3	-0.9796807D 02	0.0000000D 00
4	-0.17974660D 02	0.0000000D 00
5	-0.2031271D 01	0.1785934D 01
6	-0.2031271D 01	-0.1785934D 01
7	-0.58251657D 00	0.2097543D 01
8	-0.58251657D 00	-0.2097543D 01
9	-0.7538411D-03	0.7013760D-01
10	-0.7538411D-03	-0.7013760D-01
11	-0.1486000D 00	0.1107580D 01
12	-0.1486000D 00	-0.1107580D 01
13	-0.82999210D 02	0.1267495D 03
14	-0.82999210D 02	-0.1267495D 03
15	-0.1126702D 03	0.0000000D 00
16	-0.55864100D 01	0.0000000D 00
17	-0.2485545D 01	0.2073587D 01
18	-0.2485545D 01	-0.2073587D 01
19	-0.1470146D 00	0.1726103D 01
20	-0.1470146D 00	-0.1726103D 01
21	-0.9986364D 02	0.0000000D 00
22	-0.1682087D 02	0.0000000D 00
23	-0.2054567D 01	0.1788147D 01
24	-0.2054567D 01	-0.1788147D 01
25	-0.9801945D 00	0.2096814D 01
26	-0.9801945D 00	-0.2096814D 01
27	-0.7527551D-03	0.7944021D-01
28	-0.7527551D-03	-0.7944021D-01
29	-0.2149417D-01	0.4222851D 00
30	-0.2149417D-01	-0.4222851D 00

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

70

NUMBER	REAL	IMAG
1	-0.8435307D 02	0.1327335D 03
2	-0.8435307D 02	-0.1327335D 03
3	-0.9306591D 02	0.0000000D 00
4	-0.1706914D 02	0.0000000D 00
5	-0.2041697D 01	0.1795300D 01
6	-0.2041697D 01	-0.1795300D 01
7	-0.5812165D 00	0.2095374D 01
8	-0.5812166D 00	-0.2095374D 01
9	-0.7771795D-03	0.8065670D-01
10	-0.7771795D-03	-0.8065670D-01
11	-0.1490000D 00	0.1107980D 01
12	-0.1490000D 00	-0.1107980D 01
13	-0.8299921D 02	0.1367495D 03
14	-0.8299921D 02	-0.1367495D 03
15	-0.1126562D 03	0.0000000D 00
16	-0.5586410D 01	0.0000000D 00
17	-0.2429545D 01	0.2273587D 01
18	-0.2429545D 01	-0.2273587D 01
19	-0.8420787D 02	0.1331270D 03
20	-0.8420787D 02	-0.1331270D 03
21	-0.1005612D 03	0.0000000D 00
22	-0.1583926D 02	0.0000000D 00
23	-0.2058969D 01	0.1808836D 01
24	-0.2058969D 01	-0.1808836D 01
25	-0.5819098D 00	0.2095447D 01
26	-0.5819098D 00	-0.2095447D 01
27	-0.7770763D-03	0.8066087D-01
28	-0.7770763D-03	-0.8066087D-01
29	-0.2146482D-01	0.4229847D 00
30	-0.2146482D-01	-0.4229847D 00

CD	A11	A12	A13
8	0.7660446E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

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********** EIGENVALUES **********

72

NUMBER	REAL	IMAG
1	-0.8343639D 02	0.1253672D 03
2	-0.8243639D 02	-0.1253672D 03
3	-0.1083416D 03	0.0000000D 00
4	-0.9322240D 01	0.0000000D 00
5	-0.2213904D 01	0.1968666D 01
6	-0.2213904D 01	-0.1968666D 01
7	-0.5609405D 00	0.2058913D 01
8	-0.5609405D 00	-0.2058913D 01
9	-0.1112155D-02	0.9651974D-01
10	-0.1112155D-02	-0.9651974D-01
11	-0.1496000D 00	0.1107980D 01
12	-0.1496000D 00	-0.1107980D 01
13	-0.8327683D 02	0.1358578D 03
14	-0.8327683D 02	-0.1358578D 03
15	-0.1099062D 03	0.0000000D 00
16	-0.8007443D 01	0.0000000D 00
17	-0.2278818D 01	0.2024191D 01
18	-0.2278818D 01	-0.2024191D 01
19	-0.5617566D 00	0.2058967D 01
20	-0.5617566D 00	-0.2058967D 01
21	-0.2113857D-01	0.4229808D 00
22	-0.2113857D-01	-0.4229808D 00
23	-0.1112825D-02	0.9652066D-01
24	-0.1112825D-02	-0.9652066D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.0000000E 00	0.0000000E 00	0.1000000E 01

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1000000E 01	0.0000000E 00	0.0000000E 00

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8258772D 02	0.1381492D 03
2	-0.8258772D 02	-0.1381492D 03
3	-0.1187906D 03	0.0000000D 00
4	-0.2035935D 01	0.3074859D 01
5	-0.2035935D 01	-0.3074859D 01
6	-0.3117657D 01	0.0000000D 00
7	-0.4841279D 00	0.1302669D 01
8	0.4841279D 00	-0.1302669D 01
9	-0.2183641D-02	0.1353437D 00
10	-0.2183641D-02	-0.1353437D 00
11	-0.1456000D 00	0.1107980D 01
12	-0.1456000D 00	-0.1107980D 01
13	-0.8250688D 02	0.1384527D 03
14	-0.8250688D 02	-0.1384527D 03
15	-0.1176033D 03	0.0000000D 00
16	-0.1875414D 01	0.3160159D 01
17	-0.1875414D 01	-0.3160159D 01
18	-0.2033096D 01	0.0000000D 00
19	-0.4852812D 00	0.1302748D 01
20	-0.4852812D 00	-0.1302748D 01
21	-0.2048787D-01	0.4224704D 00
22	-0.2048787D-01	-0.4224704D 00
23	-0.2183252D-02	0.1353435D 00
24	-0.2183252D-02	-0.1353435D 00
25	-0.8258921D 02	0.1384550D 03
26	-0.8258921D 02	-0.1384550D 03
27	-0.1120562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01

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********** EIGENVALUES **********

74

NUMBER	REAL	IMAG
1	-0.8449443D 02	0.1323574D 03
2	-0.8449443D 02	-0.1323574D 03
3	-0.9759064D 02	0.0000000D 00
4	-0.1828594D 02	0.0000000D 00
5	-0.5829325D 00	0.2098774D 01
6	-0.5829325D 00	-0.2098774D 01
7	-0.2027687D 01	0.1782958D 01
8	-0.2027687D 01	-0.1782958D 01
9	-0.7463105D-03	0.7903836D-01
10	-0.7463105D-03	-0.7903836D-01
11	-0.8436486D 02	0.1327025D 03
12	-0.8436486D 02	-0.1327025D 03
13	-0.9894642D 02	0.0000000D 00
14	-0.1716252D 02	0.0000000D 00
15	-0.5836057D 00	0.2098843D 01
16	-0.5836057D 00	-0.2098843D 01
17	-0.2041146D 01	0.1794768D 01
18	-0.2041146D 01	-0.1794768D 01
19	-0.7462611D-03	0.7903885D-01
20	-0.7462611D-03	-0.7903885D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 02	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.1496000D 00	0.1107980D 01
28	-0.1496000D 00	-0.1107980D 01
29	-0.2150393D-01	0.4229852D 00
30	-0.2150393D-01	-0.4229852D 00

9. SYSTEM STABILITY AS A FUNCTION OF GEOMETRICAL VARIATIONS

The data that follows shows the dependence of the IPS eigenvalues on variations of IPS geometry. The quantities that were varied were the vector distances between the pedestal CM and the gimbal hinge point (r_1) and the gimbal hinge point and telescope CM (r_2). The telescope look angle was varied between 0, 10, 20, 40 and 60 degrees. The pointing control loop bandwidth was maintained at 2 Hz and the suspension characteristics remained constant.

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7542000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R12X 0.4150000E 01	R12Y 0.0000000E 00	R12Z 0.6731000E 00
CD 12	RE2X 0.0000000E 00	RE2Y 0.0000000E 00	RE2Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1372000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.2000000E 00	0.9000000E 00	0.1683999E 01

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********** EIGENVALUES **********

75

NUMBER	REAL	IMAG
1	-0.8449253D 02	0.1323866D 03
2	-0.8449253D 02	-0.1323866D 03
3	-0.8299982D 02	0.1367474D 03
4	-0.8299982D 02	-0.1367474D 03
5	-0.1126500D 03	0.0000000D 00
6	-0.9773658D 02	0.0000000D 00
7	-0.1790157D 02	0.0000000D 00
8	-0.5592178D 01	0.0000000D 00
9	-0.2429200D 01	0.2272466D 01
10	-0.2429200D 01	-0.2272466D 01
11	-0.2085848D 01	0.1821191D 01
12	-0.2085848D 01	-0.1821191D 01
13	-0.1139537D 01	0.1814588D 01
14	-0.1139537D 01	-0.1814588D 01
15	-0.1494081D-02	0.7902680D-01
16	-0.1494081D-02	-0.7902680D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8436157D 02	0.1327339D 03
20	-0.8436157D 02	-0.1327339D 03
21	-0.9909458D 02	0.0000000D 00
22	-0.1677659D 02	0.0000000D 00
23	-0.2102682D 01	0.1834360D 01
24	-0.2102682D 01	-0.1834360D 01
25	-0.1139457D 01	0.1813410D 01
26	-0.1139457D 01	-0.1813410D 01
27	-0.1494014D-02	0.7902534D-01
28	-0.1494014D-02	-0.7902534D-01
29	-0.4239628D-01	0.4213440D 00
30	-0.4239628D-01	-0.4213440D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

76

NUMBER	REAL	IMAG
1	-0.8453161D 02	0.1322839D 03
2	-0.8453161D 02	-0.1322839D 03
3	-0.8298966D 02	0.1367810D 03
4	-0.8298966D 02	-0.1367810D 03
5	-0.1127515D 03	0.0000000D 00
6	-0.9732710D 02	0.0000000D 00
7	-0.1824227D 02	0.0000000D 00
8	-0.5501133D 01	0.0000000D 00
9	-0.2432688D 01	0.2289158D 01
10	-0.2432688D 01	-0.2289158D 01
11	-0.2081289D 01	0.1817341D 01
12	-0.2081289D 01	-0.1817341D 01
13	-0.1139874D 01	0.1814923D 01
14	-0.1139874D 01	-0.1814923D 01
15	-0.1488810D-02	0.7888718D-01
16	-0.1488810D-02	-0.7888718D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8437611D 02	0.1326956D 03
20	-0.8437611D 02	-0.1326956D 03
21	-0.3694711D 02	0.0000000D 00
22	-0.1689586D 02	0.0000000D 00
23	-0.2101093D 01	0.1833127D 01
24	-0.2101093D 01	-0.1833127D 01
25	-0.1139812D 01	0.1813598D 01
26	-0.1139812D 01	-0.1813598D 01
27	-0.1488541D-02	0.7888849D-01
28	-0.1488541D-02	-0.7888849D-01
29	-0.4299967D-01	0.4213432D 00
30	-0.4299967D-01	-0.4213432D 00

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8449744D 02	0.1323729D 03
2	-0.8449744D 02	-0.1323729D 03
3	-0.8297947D 02	0.1368148D 03
4	-0.8297947D 02	-0.1368148D 03
5	-0.9768147D 02	0.0000000D 00
6	-0.1128532D 03	0.0000000D 00
7	-0.1795412D 02	0.0000000D 00
8	-0.5410553D 01	0.0000000D 00
9	-0.2437860D 01	0.2306495D 01
10	-0.2437860D 01	-0.2306495D 01
11	-0.2084476D 01	0.1819579D 01
12	-0.2084476D 01	-0.1819579D 01
13	-0.1138174D 01	0.1814200D 01
14	-0.1138174D 01	-0.1814200D 01
15	-0.1513825D-02	0.7954746D-01
16	-0.1513825D-02	-0.7954746D-01
17	-0.2992000D 00	0.1077253D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8430908D 02	0.1328741D 03
20	-0.8430908D 02	-0.1328741D 03
21	-0.9963069D 02	0.0000000D 00
22	-0.1634285D 02	0.0000000D 00
23	-0.2108664D 01	0.1839025D 01
24	-0.2108664D 01	-0.1839025D 01
25	-0.1138135D 01	0.1812717D 01
26	-0.1138135D 01	-0.1812717D 01
27	-0.1513685D-02	0.7954785D-01
28	-0.1513685D-02	-0.7954785D-01
29	-0.4298361D-01	0.4213471D 00
30	-0.4298361D-01	-0.4213471D 00

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

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********** EIGENVALUES **********

78

NUMBER	REAL	IMAG
1	-0.8423183D 02	0.1330820D 03
2	-0.8423183D 02	-0.1330820D 03
3	-0.8295487D 02	0.1368965D 03
4	-0.8295487D 02	-0.1368965D 03
5	-0.1004148D 03	0.0000000D 00
6	-0.1130989D 03	0.0000000D 00
7	-0.1571324D 02	0.0000000D 00
8	-0.5194106D 01	0.0000000D 00
9	-0.2446538D 01	0.2351476D 01
10	-0.2446538D 01	-0.2351476D 01
11	-0.2115273D 01	0.1843426D 01
12	-0.2115273D 01	-0.1843426D 01
13	-0.1127885D 01	0.1809479D 01
14	-0.1127885D 01	-0.1809479D 01
15	-0.1667354D-02	0.8348586D-01
16	-0.1667354D-02	-0.8348586D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8396833D 02	0.1338093D 03
20	-0.8396833D 02	-0.1338093D 03
21	-0.1030675D 03	0.0000000D 00
22	-0.1553393D 02	0.0000000D 00
23	-0.2156305D 01	0.1877561D 01
24	-0.2156305D 01	-0.1877561D 01
25	-0.1127875D 01	0.1807619D 01
26	-0.1127875D 01	-0.1807619D 01
27	-0.1667322D-02	0.8348934D-01
28	-0.1667322D-02	-0.8348934D-01
29	-0.4289256D-01	0.4213699D 00
30	-0.4289256D-01	-0.4213699D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

79

NUMBER	REAL	IMAG
1	-0.9378888D 02	0.1343256D 03
2	-0.9378888D 02	-0.1343256D 03
3	-0.8291048D 02	0.1370449D 03
4	-0.8291048D 02	-0.1370449D 03
5	-0.1135428D 03	0.0000000D 00
6	-0.1048751D 03	0.0000000D 00
7	-0.1204527D 02	0.0000000D 00
8	-0.4815830D 01	0.0000000D 00
9	-0.2455012D 01	0.2444294D 01
10	-0.2455012D 01	-0.2444294D 01
11	-0.2188066D 01	0.1903940D 01
12	-0.2188066D 01	-0.1903940D 01
13	-0.1104621D 01	0.1799964D 01
14	-0.1104621D 01	-0.1799964D 01
15	-0.2023628D-02	0.9197851D-01
16	-0.2023628D-02	-0.9197851D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8346330D 02	0.1352868D 03
20	-0.8346330D 02	-0.1352868D 03
21	-0.1080828D 03	0.0000000D 00
22	-0.9412790D 01	0.0000000D 00
23	-0.2274697D 01	0.1989073D 01
24	-0.2274697D 01	-0.1989073D 01
25	-0.1104629D 01	0.1797543D 01
26	-0.1104629D 01	-0.1797543D 01
27	-0.2024049D-02	0.9197947D-01
28	-0.2024049D-02	-0.9197947D-01
29	-0.4271757D-01	0.4214134D 00
30	-0.4271757D-01	-0.4214134D 00

***** IOG INPUT PHRAMETERS *****

CD 1	M1 0.8054000E 05	M2 0.1950000E 03	M3 0.2682000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2203000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

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CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 05	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.5000000E 00	0.0000000E 00	0.1488999E 01

80

NUMBER	REAL	IMAG
1	-0.14450690 02	0.1374965D 03
2	-0.14450690 02	-0.1374965D 03
3	-0.83003080 02	0.1367366D 03
4	-0.83003080 02	-0.1367366D 03
5	-0.11261730 02	0.00000000 00
6	-0.98172280 02	0.00000000 00
7	-0.17540700 02	0.00000000 00
8	-0.56230760 01	0.00000000 00
9	-0.24273260 01	0.2266495D 01
10	-0.24273260 01	-0.2266495D 01
11	-0.20907990 01	0.1825441D 01
12	-0.20907990 01	-0.1825441D 01
13	-0.11395350 01	0.1814390D 01
14	-0.11395350 01	-0.1814390D 01
15	-0.1493807D-02	0.7902933D-01
16	-0.1493807D-02	-0.7902933D-01
17	-0.29920000 00	0.1077255D 01
18	-0.29920000 00	-0.1077255D 01
19	-0.84214920 02	0.1328575D 03
20	-0.84214920 02	-0.1328575D 03
21	-0.99566690 02	0.00000000 00
22	-0.16402490 02	0.00000000 00
23	-0.2107464D 01	0.1838058D 01
24	-0.2107464D 01	-0.1838058D 01
25	-0.1139442D 01	0.1813167D 01
26	-0.1139442D 01	-0.1813167D 01
27	-0.1493819D-02	0.7902867D-01
28	-0.1493819D-02	-0.7902867D-01
29	-0.4297295D-01	0.4213498D 00
30	-0.4297295D-01	-0.4213498D 00

CD	A11	A12	A13
8	0.9848080E 00	0.00000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

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********** EIGENVALUES **********

81

NUMBER	REAL	IMAG
1	-0.8460102D 02	0.1321032D 03
2	-0.8460102D 02	-0.1321032D 03
3	-0.8297856D 02	0.1368177D 03
4	-0.8297856D 02	-0.1368177D 03
5	-0.1128621D 03	0.0000000D 00
6	-0.9659798D 02	0.0000000D 00
7	-0.1884559D 02	0.0000000D 00
8	-0.5403973D 01	0.0000000D 00
9	-0.2437871D 01	0.2307329D 01
10	-0.2437871D 01	-0.2307329D 01
11	-0.2074032D 01	0.1811619D 01
12	-0.2074032D 01	-0.1811619D 01
13	-0.1141839D 01	0.1815992D 01
14	-0.1141839D 01	-0.1815992D 01
15	-0.1459031D-02	0.7810361D-01
16	-0.1459031D-02	-0.7810361D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8441125D 02	0.1326017D 03
20	-0.8441125D 02	-0.1326017D 03
21	-0.9858272D 02	0.0000000D 00
22	-0.1719823D 02	0.0000000D 00
23	-0.2096824D 01	0.1829803D 01
24	-0.2096824D 01	-0.1829803D 01
25	-0.1141795D 01	0.1814412D 01
26	-0.1141795D 01	-0.1814412D 01
27	-0.1459110D-02	0.7810251D-01
28	-0.1459110D-02	-0.7810251D-01
29	-0.4299640D-01	0.4213439D 00
30	-0.4299640D-01	-0.4213439D 00

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

82

NUMBER	REAL	IMAG
1	-0.8467363D 02	0.1319156D 03
2	-0.8467363D 02	-0.1319156D 03
3	-0.8295681D 02	0.1368899D 03
4	-0.8295681D 02	-0.1368899D 03
5	-0.1130791D 03	0.0000000D 00
6	-0.9582786D 02	0.0000000D 00
7	-0.1940682D 02	0.0000000D 00
8	-0.5214126D 01	0.0000000D 00
9	-0.2445248D 01	0.2246152D 01
10	-0.2445248D 01	-0.2246152D 01
11	-0.2066392D 01	0.1805179D 01
12	-0.2066392D 01	-0.1805179D 01
13	-0.1142095D 01	0.1816501D 01
14	-0.1142095D 01	-0.1816501D 01
15	-0.1454600D-02	0.7798479D-01
16	-0.1454600D-02	-0.7798479D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8442410D 02	0.1325679D 03
20	-0.8442410D 02	-0.1325679D 03
21	-0.9845100D 02	0.0000000D 00
22	-0.1730474D 02	0.0000000D 00
23	-0.2095475D 01	0.1828763D 01
24	-0.2095475D 01	-0.1828763D 01
25	-0.1142093D 01	0.1814573D 01
26	-0.1142093D 01	-0.1814573D 01
27	-0.1454555D-02	0.7798566D-01
28	-0.1454555D-02	-0.7798566D-01
29	-0.4299943D-01	0.4213412D 00
30	-0.4299943D-01	-0.4213412D 00

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

83

NUMBER	REAL	IMAG
1	-0.8458492D 02	0.1321426D 03
2	-0.8458492D 02	-0.1321426D 03
3	-0.8291316D 02	0.1370355D 03
4	-0.8291316D 02	-0.1370355D 03
5	-0.1135145D 03	0.0000000D 00
6	-0.9675501D 02	0.0000000D 00
7	-0.1873727D 02	0.0000000D 00
8	-0.4848124D 01	0.0000000D 00
9	-0.2452793D 01	0.2432207D 01
10	-0.2452793D 01	-0.2432207D 01
11	-0.2073300D 01	0.1809560D 01
12	-0.2073300D 01	-0.1809560D 01
13	-0.1136411D 01	0.1814311D 01
14	-0.1136411D 01	-0.1814311D 01
15	-0.1538036D-02	0.8019087D-01
16	-0.1538036D-02	-0.8019087D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8420307D 02	0.1331591D 03
20	-0.8420307D 02	-0.1331591D 03
21	-0.1007019D 03	0.0000000D 00
22	-0.1548345D 02	0.0000000D 00
23	-0.2121149D 01	0.1848845D 01
24	-0.2121149D 01	-0.1848845D 01
25	-0.1136466D 01	0.1811625D 01
26	-0.1136466D 01	-0.1811625D 01
27	-0.1538078D-02	0.8019111D-01
28	-0.1538078D-02	-0.8019111D-01
29	-0.4294426D-01	0.4213571D 00
30	-0.4294426D-01	-0.4213571D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

84

NUMBER	REAL	IMAG
1	-0.8424001D 02	0.1330564D 03
2	-0.8424001D 02	-0.1330564D 03
3	-0.8285579D 02	0.1272282D 03
4	-0.8285579D 02	-0.1272283D 03
5	-0.1140866D 03	0.0000000D 00
6	-0.1003153D 02	0.0000000D 00
7	-0.1582847D 02	0.0000000D 00
8	-0.4408526D 01	0.0000000D 00
9	-0.2442130D 01	0.2559841D 01
10	-0.2442130D 01	-0.2559841D 01
11	-0.2110040D 01	0.1837182D 01
12	-0.2110040D 01	-0.1837182D 01
13	-0.1120380D 01	0.1807660D 01
14	-0.1120380D 01	-0.1807660D 01
15	-0.1779225D-02	0.8625185D-01
16	-0.1779225D-02	-0.8625185D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8274292D 02	0.1344539D 03
20	-0.8274292D 02	-0.1344539D 03
21	-0.1053106D 03	0.0000000D 00
22	-0.1172594D 02	0.0000000D 00
23	-0.2198937D 01	0.1914601D 01
24	-0.2198937D 01	-0.1914601D 01
25	-0.1120442D 01	0.1803970D 01
26	-0.1120442D 01	-0.1803970D 01
27	-0.1779568D-02	0.8625147D-01
28	-0.1779568D-02	-0.8625147D-01
29	-0.4280488D-01	0.4213917D 00
30	-0.4280488D-01	-0.4213917D 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2901000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1608999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

CD	CK1X	CK1Y	CK1Z
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.1000000E 01	0.0000000E 00	0.1688990E 01

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********** EIGENVALUES **********

85

NUMBER	REAL	IMAG
1	-0.8430791D 02	0.1328786D 03
2	-0.8430791D 02	-0.1328786D 03
3	-0.8301565D 02	0.1366949D 03
4	-0.8301565D 02	-0.1366949D 03
5	-0.1124908D 03	0.0000000D 00
6	-0.9964921D 02	0.0000000D 00
7	-0.1631495D 02	0.0000000D 00
8	-0.5743491D 01	0.0000000D 00
9	-0.2419622D 01	0.2243756D 01
10	-0.2419622D 01	-0.2243756D 01
11	-0.2109525D 01	0.1841767D 01
12	-0.2109525D 01	-0.1841767D 01
13	-0.1139525D 01	0.1813684D 01
14	-0.1139525D 01	-0.1813684D 01
15	-0.1493613D-02	0.7902405D-01
16	-0.1493613D-02	-0.7902405D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8416055D 02	0.1332719D 03
20	-0.8416055D 02	-0.1332719D 03
21	-0.1011172D 03	0.0000000D 00
22	-0.1517342D 02	0.0000000D 00
23	-0.2124906D 01	0.1851757D 01
24	-0.2124906D 01	-0.1851757D 01
25	-0.1139376D 01	0.1812299D 01
26	-0.1139376D 01	-0.1812299D 01
27	-0.1493736D-02	0.7903011D-01
28	-0.1493736D-02	-0.7903011D-01
29	-0.4288977D-01	0.4213706D 00
30	-0.4288977D-01	-0.4213706D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

86 NUMBER	REAL	IMAG
1	-0.8463277D 02	0.1320209D 03
2	-0.8463277D 02	-0.1320209D 03
3	-0.8296663D 02	0.1368572D 03
4	-0.8296663D 02	-0.1368572D 03
5	-0.1129680D 03	0.0000000D 00
6	-0.9626221D 02	0.0000000D 00
7	-0.1012360D 02	0.0000000D 00
8	-0.5303242D 01	0.0000000D 00
9	-0.2441249D 01	0.2326208D 01
10	-0.2441249D 01	-0.2326208D 01
11	-0.2071065D 01	0.1803774D 01
12	-0.2071065D 01	-0.1803774D 01
13	-0.1144961D 01	0.1817316D 01
14	-0.1144961D 01	-0.1817316D 01
15	-0.1412185D-02	0.7683810D-01
16	-0.1412185D-02	-0.7683810D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8437985D 02	0.1326816D 03
20	-0.8437985D 02	-0.1326816D 03
21	-0.9696855D 02	0.0000000D 00
22	-0.1697665D 02	0.0000000D 00
23	-0.2098533D 01	0.1831041D 01
24	-0.2098533D 01	-0.1831041D 01
25	-0.1144898D 01	0.1815255D 01
26	-0.1144898D 01	-0.1815255D 01
27	-0.1412242D-02	0.7684298D-01
28	-0.1412242D-02	-0.7684298D-01
29	-0.4295068D-01	0.4213554D 00
30	-0.4295068D-01	-0.4213554D 00

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

87

NUMBER	REAL	IMAG
1	-0.8487704D 02	0.1314013D 03
2	-0.8487704D 02	-0.1314013D 03
3	-0.8293059D 02	0.1369771D 03
4	-0.8293059D 02	-0.1369771D 03
5	-0.1133401D 03	0.0000000D 00
6	-0.9364592D 02	0.0000000D 00
7	-0.2129212D 02	0.0000000D 00
8	-0.4995536D 01	0.0000000D 00
9	-0.2458268D 01	0.2394237D 01
10	-0.2458268D 01	-0.2394237D 01
11	-0.2048815D 01	0.1791784D 01
12	-0.2048815D 01	-0.1791784D 01
13	-0.1148031D 01	0.1819665D 01
14	-0.1148031D 01	-0.1819665D 01
15	-0.1365793D-02	0.7556445D-01
16	-0.1365793D-02	-0.7556445D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8452599D 02	0.1322985D 03
20	-0.8452599D 02	-0.1322985D 03
21	-0.9738592D 02	0.0000000D 00
22	-0.1819084D 02	0.0000000D 00
23	-0.2083804D 01	0.1819768D 01
24	-0.2083804D 01	-0.1819768D 01
25	-0.1148060D 01	0.1817015D 01
26	-0.1148060D 01	-0.1817015D 01
27	-0.1365825D-02	0.7556646D-01
28	-0.1365825D-02	-0.7556646D-01
29	-0.4298746D-01	0.4213463D 00
30	-0.4298746D-01	-0.4213463D 00

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

88

NUMBER	REAL	IMAG
1	-0.8509049D 02	0.1308757D 03
2	-0.8509049D 02	-0.1308757D 03
3	-0.8287215D 02	0.1371729D 03
4	-0.8287215D 02	-0.1371729D 03
5	-0.1139224D 03	0.0000000D 00
6	-0.9129005D 02	0.0000000D 00
7	-0.2325664D 02	0.0000000D 00
8	-0.4574602D 01	0.0000000D 00
9	-0.2446937D 01	0.2517689D 01
10	-0.2446937D 01	-0.2517689D 01
11	-0.2032026D 01	0.1777942D 01
12	-0.2032026D 01	-0.1777942D 01
13	-0.1148135D 01	0.1820823D 01
14	-0.1148135D 01	-0.1820823D 01
15	-0.1362172D-02	0.7546391D-01
16	-0.1362172D-02	-0.7546391D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8453817D 02	0.1322670D 03
20	-0.8453817D 02	-0.1322670D 03
21	-0.9725989D 02	0.0000000D 00
22	-0.1829268D 02	0.0000000D 00
23	-0.2082662D 01	0.1818901D 01
24	-0.2082662D 01	-0.1818901D 01
25	-0.1148303D 01	0.1817154D 01
26	-0.1148303D 01	-0.1817154D 01
27	-0.1362056D-02	0.7546769D-01
28	-0.1362056D-02	-0.7546769D-01
29	-0.4299040D-01	0.4213455D 00
30	-0.4299040D-01	-0.4213455D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

89

NUMBER	REAL	IMAG
1	-0.8492663D 02	0.1312746D 03
2	-0.8492663D 02	-0.1312746D 03
3	-0.8281374D 02	0.1373703D 03
4	-0.8281374D 02	-0.1373703D 03
5	-0.1145043D 03	0.0000000D 00
6	-0.9308564D 02	0.0000000D 00
7	-0.2178601D 02	0.0000000D 00
8	-0.4132860D 01	0.0000000D 00
9	-0.2414598D 01	0.2651409D 01
10	-0.2414598D 01	-0.2651409D 01
11	-0.2042106D 01	0.1784557D 01
12	-0.2042106D 01	-0.1784557D 01
13	-0.1140003D 01	0.1817805D 01
14	-0.1140003D 01	-0.1817805D 01
15	-0.1481220D-02	0.7869449D-01
16	-0.1481220D-02	-0.7869449D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8419135D 02	0.1331879D 03
20	-0.8419135D 02	-0.1331879D 03
21	-0.1008059D 03	0.0000000D 00
22	-0.1542560D 02	0.0000000D 00
23	-0.2120841D 01	0.1848516D 01
24	-0.2120841D 01	-0.1848516D 01
25	-0.1146215D 01	0.1812738D 01
26	-0.1140215D 01	-0.1812738D 01
27	-0.1481245D-02	0.7869993D-01
28	-0.1481245D-02	-0.7869993D-01
29	-0.4289872D-01	0.4213681D 00
30	-0.4289872D-01	-0.4213681D 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2603000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1150000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

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CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.2000000E 01	0.0000000E 00	0.1688999E 01

NUMBER	REAL	IMAG
1	-0.8030791D 02	0.1144881D 02
2	-0.8030791D 02	-0.1144881D 02
3	-0.8030805D 02	0.1364480D 01
4	-0.8030805D 02	-0.1364480D 01
5	-0.1117354D 03	0.0000000D 00
6	-0.1047336D 03	0.0000000D 00
7	-0.1201000D 02	0.0000000D 00
8	-0.6504907D 01	0.0000000D 00
9	-0.2354902D 01	0.2106342D 01
10	-0.2354902D 01	-0.2106342D 01
11	-0.2218327D 01	0.1949055D 01
12	-0.2218327D 01	-0.1949055D 01
13	-0.1139385D 01	0.1810892D 01
14	-0.1139385D 01	-0.1810892D 01
15	-0.1492722D-02	0.7902855D-01
16	-0.1492722D-02	-0.7902855D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8369029D 02	0.1345962D 03
20	-0.8369029D 02	-0.1345962D 03
21	-0.1057845D 03	0.0000000D 00
22	-0.1145064D 02	0.0000000D 00
23	-0.2200832D 01	0.1916075D 01
24	-0.2200832D 01	-0.1916075D 01
25	-0.1138997D 01	0.1808894D 01
26	-0.1138997D 01	-0.1808894D 01
27	-0.1492668D-02	0.7903200D-01
28	-0.1492668D-02	-0.7903200D-01
29	-0.4255669D-01	0.4214528D 00
30	-0.4255669D-01	-0.4214528D 00

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1A000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

91 NUMBER	REAL	IMAG
1	-0.84426670 02	0.1225598D 03
2	-0.84426670 02	-0.1225598D 03
3	-0.8296114D 02	0.1268749D 03
4	-0.8296114D 02	-0.1268749D 03
5	-0.1130334D 03	0.0000000D 00
6	-0.9841831D 02	0.0000000D 00
7	-0.1733887D 02	0.0000000D 00
8	-0.5270468D 01	0.0000000D 00
9	-0.2439449D 01	0.2327916D 01
10	-0.2439449D 01	-0.2327916D 01
11	-0.2094847D 01	0.1831265D 01
12	-0.2094847D 01	-0.1831265D 01
13	-0.1150679D 01	0.1818281D 01
14	-0.1150679D 01	-0.1818281D 01
15	-0.1326589D-02	0.7449474D-01
16	-0.1326589D-02	-0.7449474D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8406026D 02	0.1335391D 03
20	-0.8406026D 02	-0.1335391D 03
21	-0.1020856D 03	0.0000000D 00
22	-0.1446886D 02	0.0000000D 00
23	-0.2133226D 01	0.1858309D 01
24	-0.2133226D 01	-0.1858309D 01
25	-0.1150444D 01	0.1815070D 01
26	-0.1150444D 01	-0.1815070D 01
27	-0.1326292D-02	0.7449191D-01
28	-0.1326292D-02	-0.7449191D-01
29	-0.4272476D-01	0.4214111D 00
30	-0.4272476D-01	-0.4214111D 00

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

92

NUMBER	REAL	IMAG
1	-0.84946350 02	0.13122870 03
2	-0.84946350 02	-0.13122870 03
3	-0.82901360 02	0.13707450 03
4	-0.82901360 02	-0.13707450 03
5	-0.11363070 03	0.00000000 00
6	-0.92887210 02	0.00003090 00
7	-0.21922980 02	0.00000030 00
8	-0.47667740 01	0.00009000 00
9	-0.24708760 01	0.24485620 01
10	-0.24708760 01	-0.24485620 01
11	-0.20479110 01	0.17896030 01
12	-0.20479120 01	-0.17896030 01
13	-0.11581180 01	0.18236770 01
14	-0.11581180 01	-0.18236770 01
15	-0.12160900-02	0.71344050-01
16	-0.12160900-02	-0.71344050-01
17	-0.29920000 00	0.10772550 01
18	-0.29920000 00	-0.10772550 01
19	-0.84406280 02	0.13260230 03
20	-0.84406280 02	-0.13260230 03
21	-0.98571210 02	0.00000000 00
22	-0.17308790 02	0.00000000 00
23	-0.20909810 01	0.18251440 01
24	-0.20909810 01	-0.18251440 01
25	-0.11580680 01	0.18195970 01
26	-0.11580680 01	-0.18195970 01
27	-0.12164480-02	0.71343110-01
28	-0.12164480-02	-0.71343110-01
29	-0.42848580-01	0.42133800 00
30	-0.42848580-01	-0.42133800 00

CD	A11	A12	A13
8	0.76604490E 00	0.00000000E 00	0.64278800E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.64278800E 00	0.00000000E 00	0.76604440E 00

********** EIGENVALUES **********

93 NUMBER	REAL	IMAG
1	-0.8571716D 02	0.1294208D 03
2	-0.8571716D 02	-0.1294208D 03
3	-0.8283064D 02	0.1373127D 03
4	-0.8283064D 02	-0.1373127D 03
5	-0.1143349D 03	0.0000000D 00
6	-0.8387035D 02	0.0000000D 00
7	-0.2947879D 02	0.0000000D 00
8	-0.4248232D 01	0.0000000D 00
9	-0.2426523D 01	0.2607258D 01
10	-0.2426523D 01	-0.2607258D 01
11	-0.1997710D 01	0.1753155D 01
12	-0.1997710D 01	-0.1753155D 01
13	-0.1165350D 01	0.1829821D 01
14	-0.1165350D 01	-0.1829821D 01
15	-0.1108448D-02	0.6808699D-01
16	-0.1108448D-02	-0.6808699D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8488596D 02	0.1213795D 03
20	-0.8488596D 02	-0.1213795D 03
21	-0.9355221D 02	0.0000000D 00
22	-0.2136089D 02	0.0000000D 00
23	-0.2050953D 01	0.1795265D 01
24	-0.2050953D 01	-0.1795265D 01
25	-0.1165634D 01	0.1824467D 01
26	-0.1165634D 01	-0.1824467D 01
27	-0.1108067D-02	0.6808906D-01
28	-0.1108067D-02	-0.6808906D-01
29	-0.4298446D-01	0.4213470D 00
30	-0.4298446D-01	-0.4213470D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

94

NUMBER	REAL	IMAG
1	-0.8598401D 02	0.1288360D 03
2	-0.8598401D 02	-0.1288360D 03
3	-0.8277844D 02	0.1374901D 03
4	-0.8277844D 02	-0.1374901D 03
5	-0.1148548D 03	0.0000000D 00
6	-0.8032749D 02	0.0000000D 00
7	-0.3251269D 02	0.0000000D 00
8	-0.3926784D 01	0.0000000D 00
9	-0.2379221D 01	0.2727342D 01
10	0.2379221D 01	-0.2727342D 01
11	-0.1985879D 01	0.1743545D 01
12	-0.1985879D 01	-0.1743545D 01
13	-0.1165091D 01	0.1830973D 01
14	-0.1165091D 01	-0.1830973D 01
15	-0.1109388D-02	0.6811570D-01
16	-0.1109388D-02	-0.6811570D-01
17	-0.2992000D 00	0.1077255D 01
18	-0.2992000D 00	-0.1077255D 01
19	-0.8488105D 02	0.1313916D 03
20	-0.8488105D 02	-0.1313916D 03
21	-0.9360477D 02	0.0000000D 00
22	-0.2131835D 02	0.0000000D 00
23	-0.2051288D 01	0.1795510D 01
24	-0.2051288D 01	-0.1795510D 01
25	-0.1165569D 01	0.1824424D 01
26	-0.1165569D 01	-0.1824424D 01
27	-0.1109021D-02	0.6811391D-01
28	-0.1109021D-02	-0.6811391D-01
29	-0.4298324D-01	0.4213472D 00
30	-0.4298324D-01	-0.4213472D 00

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2430000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2548000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1050000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GEOMETRIC VARIATIONS

	CKIX	CKIY	CKIZ
CD 20	0.1240000E 06	0.1105000E 06	0.1384000E 06
	SR2X	SR2Y	SR22
CD 0	0.0000000E 00	0.2000000E 00	0.1688959E 01

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.84491690D 02	0.13220840D 03
2	-0.84491690D 02	-0.13220840D 03
3	-0.97743460D 02	0.00000000D 00
4	-0.17898960D 02	0.00000000D 00
5	-0.20856990D 01	0.18209870D 01
6	-0.20856990D 01	-0.18209870D 01
7	-0.11395360D 01	0.18145840D 01
8	-0.11395360D 01	-0.18145840D 01
9	-0.14940050D-02	0.79026890D-01
10	-0.14940050D-02	-0.79026890D-01
11	-0.42996750D-01	0.42134390D 00
12	-0.42996750D-01	-0.42134390D 00
13	-0.84362980D 02	0.13277080D 03
14	-0.84362980D 02	-0.13277080D 03
15	-0.82899920D 02	0.13674710D 03
16	-0.82899920D 02	-0.13674710D 03
17	-0.11264900D 03	0.00000000D 00
18	-0.99883060D 02	0.00000000D 00
19	-0.16782870D 02	0.00000000D 00
20	-0.55[illegible]	0.00000000D 00
21	-0.24291260D 01	0.22722540D 01
22	-0.24291260D 01	-0.22722540D 01
23	-0.21028120D 01	0.19345600D 01
24	-0.21028120D 01	-0.19345600D 01
25	-0.11394600D 01	0.18134200D 01
26	-0.11394600D 01	-0.18134200D 01
27	-0.14938640D-02	0.79029720D-01
28	-0.14938640D-02	-0.79029720D-01
29	-0.29920000D 00	0.10772550D 01
30	-0.29920000D 00	-0.10772550D 01

CD	A11	A12	A13
9	0.98480800E 00	0.00000000E 00	0.17364800E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.17364800E 00	0.00000000E 00	0.98480800E 00

********** EIGENVALUES **********

96

NUMBER	REAL	IMAG
1	-0.8445504D 02	0.1324848D 03
2	-0.8445504D 02	-0.1324848D 03
3	-0.8432315D 02	0.1328369D 03
4	-0.8432315D 02	-0.1328369D 03
5	-0.8299993D 02	0.1367471D 03
6	-0.8299993D 02	-0.1367471D 03
7	-0.9812405D 02	0.0000000D 00
8	-0.1126489D 03	0.0000000D 00
9	-0.9948944D 02	0.0000000D 00
10	-0.1758604D 02	0.0000000D 00
11	-0.1645258D 02	0.0000000D 00
12	-0.5503331D 01	0.0000000D 00
13	-0.2429116D 01	0.2272228D 01
14	-0.2429116D 01	-0.2272228D 01
15	-0.2089680D 01	0.1824119D 01
16	-0.2089680D 01	-0.1824119D 01
17	-0.2107346D 01	0.1838100D 01
18	-0.2107346D 01	-0.1838100D 01
19	-0.1138519D 01	0.1814054D 01
20	-0.1138519D 01	-0.1814054D 01
21	-0.1138441D 01	0.1812887D 01
22	-0.1138441D 01	-0.1812887D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4238708D-01	0.4213462D 00
26	-0.4298708D-01	-0.4213463D 00
27	-0.1509109D-02	0.7942788D-01
28	-0.1509109D-02	-0.7942788D-01
29	-0.1508844D-02	0.7942524D-01
30	-0.1508844D-02	-0.7942524D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

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********** EIGENVALUES **********

97

NUMBER	REAL	IMAG
1	-0.8434823D 02	0.1327688D 03
2	-0.8434823D 02	-0.1327688D 03
3	-0.8420779D 02	0.1331477D 03
4	-0.8420779D 02	-0.1331477D 03
5	-0.8299997D 02	0.1367469D 03
6	-0.8299997D 02	-0.1367469D 03
7	-0.9922759D 02	0.0000000D 00
8	-0.1126485D 03	0.0000000D 00
9	-0.1006608D 03	0.0000000D 00
10	-0.1667815D 02	0.0000000D 00
11	-0.1550457D 02	0.0000000D 00
12	-0.5593744D 01	0.0000000D 00
13	-0.2429085D 01	0.2272137D 01
14	-0.2429085D 01	-0.2272137D 01
15	-0.2102100D 01	0.1833969D 01
16	-0.2102100D 01	-0.1833969D 01
17	-0.2121504D 01	0.1849288D 01
18	-0.2121504D 01	-0.1849288D 01
19	-0.1135388D 01	0.1812452D 01
20	-0.1135388D 01	-0.1812452D 01
21	-0.1135320D 01	0.1811281D 01
22	-0.1135320D 01	-0.1811281D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4295799D-01	0.4213535D 00
26	-0.4295799D-01	-0.4213535D 00
27	-0.1555788D-02	0.8064461D-01
28	-0.1555788D-02	-0.8064461D-01
29	-0.1555684D-02	0.8064321D-01
30	-0.1555684D-02	-0.8064321D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

98

NUMBER	REAL	IMAG
1	-0.8396103D 02	0.1338352D 03
2	-0.8396103D 02	-0.1338352D 03
3	-0.8380252D 02	0.1342824D 03
4	-0.8380252D 02	-0.1342824D 03
5	-0.8300016D 02	0.1367463D 03
6	-0.8300016D 02	-0.1367463D 03
7	-0.1031640D 03	0.0000000D 00
8	-0.1126465D 03	0.0000000D 00
9	-0.1047237D 03	0.0000000D 00
10	-0.1342824D 02	0.0000000D 00
11	-0.1219485D 02	0.0000000D 00
12	-0.5595929D 01	0.0000000D 00
13	-0.2428902D 01	0.2271635D 01
14	-0.2428902D 01	-0.2271635D 01
15	-0.2160079D 01	0.1881857D 01
16	-0.2160079D 01	-0.1881857D 01
17	-0.2187689D 01	0.1904752D 01
18	-0.2187689D 01	-0.1904752D 01
19	-0.1121403D 01	0.1805804D 01
20	-0.1121403D 01	-0.1805804D 01
21	-0.1121343D 01	0.1804611D 01
22	-0.1121343D 01	-0.1804611D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4284051D-01	0.4213827D 00
26	-0.4284051D-01	-0.4213827D 00
27	-0.1766088D-02	0.8592289D-01
28	-0.1766088D-02	-0.8592289D-01
29	-0.1766224D-02	0.8592400D-01
30	-0.1766224D-02	-0.8592400D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

99

NUMBER	REAL	IMAG
1	-0.8342680D 02	0.1354084D 03
2	-0.8342680D 02	-0.1354084D 03
3	-0.8327968D 02	0.1358535D 03
4	-0.8327968D 02	-0.1358535D 03
5	-0.8300067D 02	0.1367444D 03
6	-0.8300067D 02	-0.1367444D 03
7	-0.1084839D 03	0.0000000D 00
8	-0.1126408D 03	0.0000000D 00
9	-0.1098961D 03	0.0000000D 00
10	-0.8956485D 01	0.0000000D 00
11	-0.7865208D 01	0.0000000D 00
12	-0.5604138D 01	0.0000000D 00
13	-0.2427842D 01	0.2269264D 01
14	-0.2427842D 01	-0.2269264D 01
15	-0.2299327D 01	0.2018695D 01
16	-0.2299327D 01	-0.2018695D 01
17	-0.2344299D 01	0.2072736D 01
18	-0.2344299D 01	-0.2072736D 01
19	-0.1091716D 01	0.1793949D 01
20	-0.1091716D 01	-0.1793949D 01
21	-0.1091704D 01	0.1792713D 01
22	-0.1091704D 01	-0.1792713D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4263402D-01	0.4214335D 00
26	-0.4263402D-01	-0.4214335D 00
27	-0.2227478D-02	0.9650155D-01
28	-0.2227478D-02	-0.9650155D-01
29	-0.2228066D-02	0.9650025D-01
30	-0.2228066D-02	-0.9650025D-01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1694999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

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CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1394000E 06

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.5000000E 00	0.1688999E 01

********** EIGENVALUES **********

100

NUMBER	REAL	IMAG
1	-0.8444582D 02	0.1325075D 02
2	-0.8444582D 02	-0.1325075D 02
3	-0.9821127D 02	0.0000000D 00
4	-0.1752764D 02	0.0000000D 00
5	-0.2089817D 01	0.1824114D 01
6	-0.2089817D 01	-0.1824114D 01
7	-0.1139526D 01	0.1814364D 01
8	-0.1139526D 01	-0.1814364D 01
9	-0.1494018D-02	0.7902576D-01
10	-0.1494018D-02	-0.7902576D-01
11	-0.4297600D-01	0.4213492D 00
12	-0.4297600D-01	-0.4213492D 00
13	-0.8432259D 02	0.1328393D 03
14	-0.8432259D 02	-0.1328393D 03
15	-0.8300376D 02	0.1367344D 03
16	-0.8300376D 02	-0.1367344D 03
17	-0.1126104D 03	0.0000000D 00
18	-0.9949967D 02	0.0000000D 00
19	-0.1643662D 02	0.0000000D 00
20	-0.5629793D 01	0.0000000D 00
21	-0.2426834D 01	0.2265138D 01
22	-0.2426834D 01	-0.2265138D 01
23	-0.2108336D 01	0.1839368D 01
24	-0.2108336D 01	-0.1839368D 01
25	-0.1139456D 01	0.1813222D 01
26	-0.1139456D 01	-0.1813222D 01
27	-0.1493876D-02	0.7903041D-01
28	-0.1493876D-02	-0.7903041D-01
29	-0.2992000D 00	0.1077255D 01
30	-0.2992000D 00	-0.1077255D 01

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

101

NUMBER	REAL	IMAG
1	-0.8440622D 02	0.1326121D 03
2	-0.8440622D 02	-0.1326121D 03
3	-0.8428693D 02	0.1329351D 03
4	-0.8428693D 02	-0.1329351D 03
5	-0.8300383D 02	0.1367341D 03
6	-0.8300383D 02	-0.1367341D 03
7	-0.9061957D 02	0.0000000D 00
8	-0.1126097D 03	0.0000000D 00
9	-0.9986293D 02	0.0000000D 00
10	-0.1719476D 02	0.0000000D 00
11	-0.1613900D 02	0.0000000D 00
12	-0.5630601D 01	0.0000000D 00
13	-0.2426770D 01	0.2264962D 01
14	-0.2426770D 01	-0.2264962D 01
15	-0.2094068D 01	0.1827426D 01
16	-0.2094068D 01	-0.1827426D 01
17	-0.2112787D 01	0.1842919D 01
18	-0.2112787D 01	-0.1842919D 01
19	-0.1138512D 01	0.1813834D 01
20	-0.1138512D 01	-0.1813834D 01
21	-0.1138439D 01	0.1812093D 01
22	-0.1138439D 01	-0.1812093D 01
23	-0.2990000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4296620D-01	0.4213517D 00
26	-0.4296620D-01	-0.4213517D 00
27	-0.1509059D-02	0.7942329D-01
28	-0.1509059D-02	-0.7942329D-01
29	-0.1509020D-02	0.7942300D-01
30	-0.1509020D-02	-0.7942300D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

102

NUMBER	REAL	IMAG
1	-0.8429205D 02	0.1329171D 03
2	-0.8429205D 02	-0.1329171D 03
3	-0.8418248D 02	0.1332184D 03
4	-0.8418248D 02	-0.1332184D 03
5	-0.8300407D 02	0.1367333D 03
6	-0.8300407D 02	-0.1367333D 03
7	-0.9979122D 02	0.0000000D 00
8	-0.1009254D 03	0.0000000D 00
9	-0.1126072D 03	0.0000000D 00
10	-0.1623766D 02	0.0000000D 00
11	-0.1527236D 02	0.0000000D 00
12	-0.5633221D 01	0.0000000D 00
13	-0.2426560D 01	0.2264387D 01
14	-0.2426560D 01	-0.2264387D 01
15	-0.2107327D 01	0.1837860D 01
16	-0.2107327D 01	-0.1837860D 01
17	-0.2126691D 01	0.1854128D 01
18	-0.2126691D 01	-0.1854128D 01
19	-0.1135377D 01	0.1812227D 01
20	-0.1135377D 01	-0.1812227D 01
21	-0.1135299D 01	0.1811091D 01
22	-0.1135299D 01	-0.1811091D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4293663D-01	0.4213589D 00
26	-0.4293663D-01	-0.4213589D 00
27	-0.1555909D-02	0.8064626D-01
28	-0.1555909D-02	-0.8064626D-01
29	-0.1555721D-02	0.8064390D-01
30	-0.1555721D-02	-0.8064390D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

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********** EIGENVALUES **********

103

NUMBER	REAL	IMAG
1	-0.8389061D 02	0.1340325D 03
2	-0.8389061D 02	-0.1340325D 03
3	-0.8380350D 02	0.1342819D 03
4	-0.8380350D 02	-0.1342819D 03
5	-0.8300531D 02	0.1367291D 03
6	-0.8300531D 02	-0.1367291D 03
7	-0.1047237D 03	0.0000000D 00
8	-0.1125943D 03	0.0000000D 00
9	-0.1038572D 02	0.0000000D 00
10	-0.1288696D 02	0.0000000D 00
11	-0.1216631D 02	0.0000000D 00
12	-0.5647627D 01	0.0000000D 00
13	-0.2425304D 01	0.2261098D 01
14	-0.2425304D 01	-0.2261098D 01
15	-0.2169530D 01	0.1889362D 01
16	-0.2169530D 01	-0.1889362D 01
17	-0.2191840D 01	0.1909578D 01
18	-0.2191840D 01	-0.1909578D 01
19	-0.1121419D 01	0.1805566D 01
20	-0.1121419D 01	-0.1805566D 01
21	-0.1121289D 01	0.1804458D 01
22	-0.1121289D 01	-0.1804458D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4281678D-01	0.4213884D 00
26	-0.4281678D-01	-0.4213884D 00
27	-0.1765957D-02	0.8592499D-01
28	-0.1765957D-02	-0.8592499D-01
29	-0.1765928D-02	0.8592750D-01
30	-0.1765928D-02	-0.8592750D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

104

NUMBER	REAL	IMAG
1	-0.8339230D 02	0.1357356D 03
2	-0.8339230D 02	-0.1357356D 03
3	-0.8325918D 02	0.1356940D 03
4	-0.8325918D 02	-0.1356940D 03
5	-0.8300831D 02	0.1367179D 03
6	-0.8300831D 02	-0.1367179D 03
7	-0.1094631D 03	0.2134059D 00
8	-0.1094631D 03	-0.2134059D 00
9	-0.1125599D 03	0.0000000D 00
10	-0.8167712D 01	0.1998558D 00
11	-0.8167712D 01	-0.1998558D 00
12	-0.5701619D 01	0.0000000D 00
13	-0.2416970D 01	0.2244499D 01
14	-0.2416970D 01	-0.2244499D 01
15	-0.2328780D 01	0.2056277D 01
16	-0.2328780D 01	-0.2056277D 01
17	-0.2341770D 01	0.2066005D 01
18	-0.2341770D 01	-0.2066005D 01
19	-0.1091764D 01	0.1793663D 01
20	-0.1091764D 01	-0.1793663D 01
21	-0.1091589D 01	0.1792670D 01
22	-0.1091589D 01	-0.1792670D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4260491D-01	0.4214410D 00
26	-0.4260491D-01	-0.4214410D 00
27	-0.2227225D-02	0.9649781D-01
28	-0.2227225D-02	-0.9649781D-01
29	-0.2227753D-02	0.9650155D-01
30	-0.2227753D-02	-0.9650155D-01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.1000000E 01	0.1688999E 01

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********** EIGENVALUES **********

105

NUMBER	REAL	IMAG
1	-0.8429364D 02	0.1329085D 03
2	-0.8429364D 02	-0.1329085D 03
3	-0.9975416D 02	0.0000000D 00
4	-0.1630328D 02	0.0000000D 00
5	-0.2104805D 01	0.1835641D 01
6	-0.2104805D 01	-0.1835641D 01
7	-0.1139483D 01	0.1813583D 01
8	-0.1139483D 01	-0.1813582D 01
9	-0.1493794D-02	0.7902752D-01
10	-0.1493794D-02	-0.7902752D-01
11	-0.4290184D-01	0.4213676D 00
12	-0.4290184D-01	-0.4213676D 00
13	-0.8418416D 02	0.1332162D 03
14	-0.8418416D 02	-0.1332162D 03
15	-0.8301867D 02	0.1366848D 03
16	-0.8301867D 02	-0.1366848D 03
17	-0.1124602D 03	0.0000000D 00
18	-0.1009198D 02	0.0000000D 00
19	-0.1525311D 02	0.0000000D 00
20	-0.5774055D 01	0.0000000D 00
21	-0.2417202D 01	0.2237802D 01
22	-0.2417202D 01	-0.2237802D 01
23	-0.2129493D 01	0.1858127D 01
24	-0.2129493D 01	-0.1858127D 01
25	-0.1139439D 01	0.1812518D 01
26	-0.1139439D 01	-0.1812518D 01
27	-0.1493675D-02	0.7902856D-01
28	-0.1493675D-02	-0.7902856D-01
29	-0.2992000D 00	0.1077255D 01
30	-0.2992000D 00	-0.1077255D 01

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

106

NUMBER	REAL	IMAG
1	-0.8424116D 02	0.1330472D 03
2	-0.8424116D 02	-0.1330472D 03
3	-0.8416540D 02	0.1332707D 03
4	-0.8416540D 02	-0.1332707D 03
5	-0.8301901D 02	0.1366836D 03
6	-0.8301901D 02	-0.1366836D 03
7	-0.1002750D 03	0.0000000D 00
8	-0.1011243D 03	0.0000000D 00
9	-0.1124567D 03	0.0000000D 00
10	-0.1590128D 02	0.0000000D 00
11	-0.1506187D 02	0.0000000D 00
12	-0.5777888D 01	0.0000000D 00
13	-0.2416868D 01	0.2[illegible]6989D 01
14	-0.2416868D 01	-0.2236989D 01
15	-0.2109905D 01	0.1829512D 01
16	-0.2109905D 01	-0.1829512D 01
17	-0.2133832D 01	0.1861890D 01
18	-0.2133832D 01	-0.1861890D 01
19	-0.1138471D 01	0.1813049D 01
20	-0.1138471D 01	-0.1813049D 01
21	-0.1138407D 01	0.1811996D 01
22	-0.1138407D 01	-0.1811996D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4289149D-01	0.4213702D 00
26	-0.4289149D-01	-0.4213702D 00
27	-0.1508795D-02	0.7942397D-01
28	-0.1508795D-02	-0.7942397D-01
29	-0.1508565D-02	0.7942711D-01
30	-0.1508565D-02	-0.7942711D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

107

NUMBER	REAL	IMAG
1	-0.8396902D 02	0.1333921D 03
2	-0.8396902D 02	-0.1333921D 03
3	-0.8423042D 02	0.1334933D 03
4	-0.8423042D 02	-0.1334933D 03
5	-0.8302010D 02	0.1366800D 03
6	-0.8302010D 02	-0.1366800D 03
7	-0.1017498D 03	0.4674473D 00
8	-0.1017498D 03	-0.4674473D 00
9	-0.1124454D 02	0.0000000D 00
10	-0.1462154D 02	0.2707584D 00
11	-0.1462154D 02	-0.2707584D 00
12	-0.5790320D 01	0.0000000D 00
13	-0.2415758D 01	0.2234325D 01
14	-0.2415758D 01	-0.2234325D 01
15	-0.2126095D 01	0.1851877D 01
16	-0.2126095D 01	-0.1851877D 01
17	-0.2147218D 01	0.1873742D 01
18	-0.2147218D 01	-0.1873742D 01
19	-0.1135361D 01	0.1811431D 01
20	-0.1135361D 01	-0.1811431D 01
21	-0.1135234D 01	0.1810418D 01
22	-0.1135234D 01	-0.1810418D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4286022D-01	0.4213779D 00
26	-0.4286022D-01	-0.4213779D 00
27	-0.1555567D-02	0.8064299D-01
28	-0.1555567D-02	-0.8064299D-01
29	-0.1555252D-02	0.8064581D-01
30	-0.1555252D-02	-0.8064581D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

108

NUMBER	REAL	IMAG
1	-0.8403736D 02	0.1346032D 03
2	-0.8403736D 02	-0.1346032D 03
3	-0.8342085D 02	0.1343681D 03
4	-0.8342085D 02	-0.1343681D 03
5	-0.8302579D 02	0.1366604D 03
6	-0.8302579D 02	-0.1366604D 03
7	-0.1054659D 03	0.1043547D 01
8	-0.1054659D 03	-0.1043547D 01
9	-0.1123855D 03	0.0000000D 00
10	-0.1155264D 02	0.7917871D 00
11	-0.1155264D 02	-0.7917871D 00
12	-0.5860866D 01	0.0000000D 00
13	-0.2408493D 01	0.2218229D 01
14	-0.2408493D 01	-0.2218229D 01
15	-0.2212393D 01	0.1911702D 01
16	-0.2212393D 01	-0.1911702D 01
17	-0.2201908D 01	0.1936691D 01
18	-0.2201908D 01	-0.1936691D 01
19	-0.1121517D 01	0.1804726D 01
20	-0.1121517D 01	-0.1804726D 01
21	-0.1121042D 01	0.1803893D 01
22	-0.1121042D 01	-0.1803893D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4273228D-01	0.4214096D 00
26	-0.4273228D-01	-0.4214096D 00
27	-0.1765844D-02	0.8592283D-01
28	-0.1765844D-02	-0.8592283D-01
29	-0.1765673D-02	0.8592477D-01
30	-0.1765673D-02	-0.8592477D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

109

NUMBER	REAL	IMAG
1	-0.8370991D 02	0.1361441D 03
2	-0.8370991D 02	-0.1361441D 03
3	-0.8276267D 02	0.1358404D 03
4	-0.8276267D 02	-0.1358404D 03
5	-0.8302809D 02	0.1366459D 03
6	-0.8302809D 02	-0.1366459D 03
7	-0.1103553D 03	0.1478058D 01
8	-0.1103553D 03	-0.1478058D 01
9	-0.1123373D 03	0.0000000D 00
10	-0.7346450D 01	0.1233653D 01
11	-0.7346450D 01	-0.1233652D 01
12	-0.6032849D 01	0.0000000D 00
13	-0.2486901D 01	0.2039227D 01
14	-0.2486901D 01	-0.2039227D 01
15	-0.2386308D 01	0.2160175D 01
16	-0.2386308D 01	-0.2160175D 01
17	-0.2271713D 01	0.2190756D 01
18	-0.2271713D 01	-0.2190756D 01
19	-0.1092165D 01	0.1792881D 01
20	-0.1092165D 01	-0.1792881D 01
21	-0.1090961D 01	0.1792293D 01
22	-0.1090961D 01	-0.1792293D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4250079D-01	0.4214663D 00
26	-0.4250079D-01	-0.4214663D 00
27	-0.2226403D-02	0.9650169D-01
28	-0.2226403D-02	-0.9650169D-01
29	-0.2227627D-02	0.9650173D-01
30	-0.2227627D-02	-0.9650173D-01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8054000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GEOMETRIC VARIATIONS

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CO                CK1X              CK1Y              CK12
20          0.1240000E 06     0.1105000E 06     0.1384000E 06

CO                SR2X              SR2Y              SR22
 6          0.0000000E 00     0.2000000E 01     0.1683999E 01
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110

NUMBER	[S2]	[S3]
1	-0.8836211D 00	0.1748245D 00
2	0.8836211D 00	-0.1748245D 00
3	-0.1844576D 01	0.0000000D 00
4	0.1250876D 02	0.0000000D 00
5	-0.2169419D 01	0.1886286D 01
6	-0.2169419D 01	-0.1886286D 01
7	-0.1139216D 01	0.1810505D 01
8	-0.1139216D 01	-0.1810505D 01
9	-0.1492836D-02	0.7902849D-01
10	-0.1492836D-02	-0.7902849D-01
11	-0.4260502D-01	0.4214406D 00
12	-0.4260502D-01	-0.4214406D 00
13	-0.8368296D 02	0.1346510D 03
14	-0.8368296D 02	-0.1346510D 03
15	-0.8311471D 02	0.1363655D 03
16	-0.8311471D 02	-0.1363655D 03
17	-0.1114813D 03	0.0000000D 00
18	-0.1059968D 03	0.0000000D 00
19	-0.1087562D 02	0.0000000D 00
20	-0.6796870D 01	0.0000000D 00
21	-0.2343720D 01	0.1996677D 01
22	-0.2343720D 01	-0.1996677D 01
23	-0.2248074D 01	0.2059325D 01
24	-0.2248074D 01	-0.2059325D 01
25	-0.1139273D 01	0.1809734D 01
26	-0.1139273D 01	-0.1809734D 01
27	-0.1492387D-02	0.7902826D-01
28	-0.1492387D-02	-0.7902826D-01
29	-0.2992000D 00	0.1077255D 01
30	-0.2992000D 00	-0.1077255D 01

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

111

NUMBER	REAL	IMAG
1	-0.8374248D 02	0.1344149D 03
2	-0.8374248D 02	-0.1344149D 03
3	-0.8370262D 02	0.1346210D 03
4	-0.8370262D 02	-0.1346210D 03
5	-0.8311774D 02	0.1363549D 03
6	-0.8311774D 02	-0.1363549D 03
7	-0.1114482D 03	0.0000000D 00
8	-0.1051492D 03	0.0000000D 00
9	-0.1059129D 03	0.0000000D 00
10	-0.1212396D 02	0.0000000D 00
11	-0.1079093D 02	0.0000000D 00
12	-0.6842112D 01	0.0000000D 00
13	-0.2176810D 01	0.1894358D 01
14	-0.2176810D 01	-0.1894358D 01
15	-0.2357922D 01	0.1986014D 01
16	-0.2357922D 01	-0.1986014D 01
17	-0.2237546D 01	0.2071549D 01
18	-0.2237546D 01	-0.2071549D 01
19	-0.1139248D 01	0.1809940D 01
20	-0.1139248D 01	-0.1809940D 01
21	-0.1138180D 01	0.1809260D 01
22	-0.1138180D 01	-0.1809260D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4259243D-01	0.4214441D 00
26	-0.4259243D-01	-0.4214441D 00
27	-0.1508070D-02	0.7942404D-01
28	-0.1508070D-02	-0.7942404D-01
29	-0.1507533D-02	0.7942677D-01
30	-0.1507533D-02	-0.7942677D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

112

NUMBER	REAL	IMAG
1	-0.8394818D 02	0.1348900D 03
2	-0.8394818D 02	-0.1348900D 03
3	-0.8331984D 02	0.1346650D 03
4	-0.8331984D 02	-0.1346650D 03
5	-0.8312755D 02	0.1363204D 03
6	-0.8312755D 02	-0.1363204D 03
7	-0.1113399D 03	0.0000000D 00
8	-0.1064182D 03	0.1034489D 01
9	-0.1064182D 03	-0.1034489D 01
10	-0.1058604D 02	0.5272573D 00
11	-0.1058604D 02	-0.5272573D 00
12	-0.7000295D 01	0.0000000D 00
13	-0.2391830D 01	0.1963841D 01
14	-0.2391830D 01	-0.1963841D 01
15	-0.2200181D 01	0.1913801D 01
16	-0.2200181D 01	-0.1913801D 01
17	-0.2214900D 01	0.2098213D 01
18	-0.2214900D 01	-0.2098213D 01
19	-0.1175312D 01	0.1808704D 01
20	-0.1135313D 01	-0.1808704D 01
21	-0.1134752D 01	0.1807749D 01
22	-0.1134752D 01	-0.1807749D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4255431D-01	0.4214530D 00
26	-0.4255431D-01	-0.4214530D 00
27	-0.1554468D-02	0.8064297D-01
28	-0.1554468D-02	-0.8064297D-01
29	-0.1554169D-02	0.8064538D-01
30	-0.1554169D-02	-0.8064538D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

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********** EIGENVALUES **********

113

NUMBER	REAL	IMAG
1	-0.8409476D 02	0.1359611D 03
2	-0.8409476D 02	-0.1359611D 03
3	-0.8255612D 02	0.1354608D 03
4	-0.8255612D 02	-0.1354608D 03
5	-0.8314530D 02	0.1362468D 03
6	-0.8314530D 02	-0.1362468D 03
7	-0.1111016D 03	0.0000000D 00
8	-0.1095055D 03	0.2434563D 01
9	-0.1095055D 03	-0.2434563D 01
10	-0.7963564D 01	0.2098789D 01
11	-0.7963564D 01	-0.2098789D 01
12	-0.7486138D 01	0.0000000D 00
13	-0.2504308D 01	0.1901728D 01
14	-0.2504308D 01	-0.1901728D 01
15	-0.2305081D 01	0.2021692D 01
16	-0.2305081D 01	-0.2021692D 01
17	-0.2161343D 01	0.2174437D 01
18	-0.2161343D 01	-0.2174437D 01
19	-0.1121790D 01	0.1801962D 01
20	-0.1121790D 01	-0.1801962D 01
21	-0.1119993D 01	0.1801172D 01
22	-0.1119993D 01	-0.1801172D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4239372D-01	0.4214922D 00
26	-0.4239372D-01	-0.4214922D 00
27	-0.1764581D-02	0.8592507D-01
28	-0.1764581D-02	-0.8592507D-01
29	-0.1763995D-02	0.8592154D-01
30	-0.1763995D-02	-0.8592154D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

114

NUMBER	REAL	IMAG
1	-0.8409116D 02	0.1369476D 03
2	-0.8409116D 02	-0.1369476D 03
3	-0.8197394D 02	0.1362954D 03
4	-0.3197394D 02	-0.1362954D 03
5	-0.8292330D 02	0.1369876D 03
6	-0.8292330D 02	-0.1369876D 03
7	-0.1133672D 03	0.0000000D 00
8	-0.1123555D 03	0.3205245D 01
9	-0.1123555D 03	-0.3205245D 01
10	-0.5672129D 01	0.2940194D 01
11	-0.5672129D 01	-0.2940194D 01
12	-0.5132670D 01	0.0000000D 00
13	-0.2774513D 01	0.1827405D 01
14	-0.2774513D 01	-0.1827405D 01
15	-0.2456278D 01	0.2358559D 01
16	-0.2456278D 01	-0.2358559D 01
17	-0.2116269D 01	0.2297389D 01
18	-0.2116269D 01	-0.2297389D 01
19	-0.1092627D 01	0.1790725D 01
20	-0.1092627D 01	-0.1790725D 01
21	-0.1089435D 01	0.1789914D 01
22	-0.1089435D 01	-0.1789914D 01
23	-0.2992000D 00	0.1072255D 01
24	-0.2992000D 00	-0.1072255D 01
25	-0.4208397D-01	0.4215675D 00
26	-0.4208397D-01	-0.4215675D 00
27	-0.2225558D-02	0.9649765D-01
28	-0.2225558D-02	-0.9649765D-01
29	-0.2224494D-02	0.9650122D-01
30	-0.2224494D-02	-0.9650122D-01

***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7513000E 07
CD 3	J2Y 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GEOMETRIC VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.2000000E 00	0.2000000E 00	0.1688999E 01

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********** EIGENVALUES **********

115

NUMBER	REAL	IMAG
1	-0.8300054D 02	0.1367451D 03
2	-0.8300054D 02	-0.1367451D 03
3	-0.8448368D 02	0.1324095D 03
4	-0.8448368D 02	-0.1324095D 03
5	-0.8435392D 02	0.1327547D 03
6	-0.8435392D 02	-0.1327547D 03
7	-0.1126428D 03	0.0000000D 00
8	-0.9782701D 02	0.0000000D 00
9	-0.9917463D 02	0.0000000D 00
10	-0.1782975D 02	0.0000000D 00
11	-0.1671014D 02	0.0000000D 00
12	-0.5599011D 01	0.0000000D 00
13	-0.2428777D 01	0.227..29D 01
14	-0.2428777D 01	-0.2271129D 01
15	-0.2086629D 01	0.1821781D 01
16	-0.2086629D 01	-0.1821781D 01
17	-0.2103723D 01	0.1835266D 01
18	-0.2103723D 01	-0.1835266D 01
19	-0.1139532D 01	0.1814545D 01
20	-0.1139532D 01	-0.1814545D 01
21	-0.1139458D 01	0.1813373D 01
22	-0.1139458D 01	-0.1813373D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4299230D-01	0.4213450D 00
26	-0.4299230D-01	-0.4213450D 00
27	-0.1493932D-02	0.7902921D-01
28	-0.1493932D-02	-0.7902921D-01
29	-0.1493963D-02	0.7902889D-01
30	-0.1493963D-02	-0.7902889D-01

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

116

NUMBER	REAL	IMAG
1	-0.8299032D 02	0.1367788D 03
2	-0.8299032D 02	-0.1367788D 03
3	-0.8452206D 02	0.1323085D 03
4	-0.8452206D 02	-0.1323085D 03
5	-0.8436889D 02	0.1327149D 03
6	-0.8436889D 02	-0.1327149D 03
7	-0.1127448D 03	0.0000000D 00
8	-0.9742497D 02	0.0000000D 00
9	-0.9902177D 02	0.0000000D 00
10	-0.1816445D 02	0.0000000D 00
11	-0.1683381D 02	0.0000000D 00
12	-0.5507421D 01	0.0000000D 00
13	-0.2433319D 01	0.2287879D 01
14	-0.2433319D 01	-0.2287879D 01
15	-0.2082107D 01	0.1817966D 01
16	-0.2082107D 01	-0.1817966D 01
17	-0.2102053D 01	0.1833952D 01
18	-0.2102053D 01	-0.1833952D 01
19	-0.1139874D 01	0.1814883D 01
20	-0.1139874D 01	-0.1814883D 01
21	-0.1139809D 01	0.1813559D 01
22	-0.1139809D 01	-0.1813559D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4299572D-01	0.4213441D 00
26	-0.4299572D-01	-0.4213441D 00
27	-0.1488757D-02	0.7888782D-01
28	-0.1488757D-02	-0.7888782D-01
29	-0.1488542D-02	0.7889271D-01
30	-0.1488542D-02	-0.7889271D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

117

NUMBER	REAL	IMAG
1	-0.8298011D 02	0.1368126D 03
2	-0.8298011D 02	-0.1368126D 03
3	-0.8446685D 02	0.1324003D 03
4	-0.8446685D 02	-0.1324003D 03
5	-0.8430325D 02	0.1328899D 03
6	-0.8430325D 02	-0.1328899D 03
7	-0.1128468D 03	0.3030303D 00
8	-0.9773978D 02	0.0000000D 00
9	-0.5969115D 02	0.0000000D 00
10	-0.1786833D 02	0.0000000D 00
11	-0.1629188D 02	0.0000000D 00
12	-0.5416556D 01	0.0000000D 00
13	-0.2437527D 01	0.2305220D 01
14	-0.2437527D 01	-0.2305220D 01
15	-0.2087789D 01	0.1820273D 01
16	-0.2085189D 01	-0.1820273D 01
17	-0.2109553D 01	0.1839805D 01
18	-0.2109553D 01	-0.1839805D 01
19	-0.1138176D 01	0.1814159D 01
20	-0.1138176D 01	-0.1814159D 01
21	-0.1138133D 01	0.1812679D 01
22	-0.1138133D 01	-0.1812679D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4297965D-01	0.4213481D 00
26	-0.4297965D-01	-0.4213481D 00
27	-0.1513668D-02	0.7954752D-01
28	-0.1513668D-02	-0.7954752D-01
29	-0.1513619D-02	0.7954997D-01
30	-0.1513619D-02	-0.7954997D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

118

NUMBER	REAL	IMAG
1	-0.8295550D 02	0.1368944D 03
2	-0.8295550D 02	-0.1368944D 03
3	-0.8422063D 02	0.1331121D 03
4	-0.8422063D 02	-0.1331121D 03
5	-0.8396511D 02	0.1338186D 03
6	-0.8396511D 02	-0.1338186D 03
7	-0.1130926D 03	0.0000000D 00
8	-0.1005271D 03	0.0000000D 00
9	-0.1031007D 03	0.0000000D 00
10	-0.1562441D 02	0.0000000D 00
11	-0.1352446D 02	0.0000000D 00
12	-0.5199397D 01	0.0000000D 00
13	-0.2446263D 01	0.2350070D 01
14	-0.2446263D 01	-0.2350070D 01
15	-0.2116498D 01	0.1844380D 01
16	-0.2116498D 01	-0.1844380D 01
17	-0.2157147D 01	0.1878364D 01
18	-0.2157147D 01	-0.1878364D 01
19	-0.1127886D 01	0.1809437D 01
20	-0.1127886D 01	-0.1809437D 01
21	-0.1127868D 01	0.1807584D 01
22	-0.1127868D 01	-0.1807584D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4288829D-01	0.4213709D 00
26	-0.4288829D-01	-0.4213709D 00
27	-0.1667161D-02	0.8348349D-01
28	-0.1667161D-02	-0.8348349D-01
29	-0.1667398D-02	0.8349255D-01
30	-0.1667398D-02	-0.8349255D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

119

NUMBER	REAL	IMAG
1	-0.8291112D 02	0.1370428D 03
2	-0.8291112D 02	-0.1370428D 03
3	-0.8377968D 02	0.1343519D 03
4	-0.8377968D 02	-0.1343519D 03
5	-0.8346125D 02	0.1352932D 03
6	-0.8346125D 02	-0.1352932D 03
7	-0.1135363D 03	0.0000000D 00
8	-0.1049656D 03	0.0000000D 00
9	-0.1081038D 03	0.0000000D 00
10	-0.1197315D 02	0.0000000D 00
11	-0.9382893D 01	0.0000000D 00
12	-0.4821669D 01	0.0000000D 00
13	-0.2454903D 01	0.2442564D 01
14	-0.2454900D 01	-0.2442564D 01
15	-0.2189755D 01	0.1905438D 01
16	-0.2189755D 01	-0.1905438D 01
17	-0.2275799D 01	0.1990316D 01
18	-0.2275799D 01	-0.1990316D 01
19	-0.1104625D 01	0.1799923D 01
20	-0.1104625D 01	-0.1799923D 01
21	-0.1104617D 01	0.1797517D 01
22	-0.1104617D 01	-0.1797517D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4271270D-01	0.4214149D 00
26	-0.4271270D-01	-0.4214149D 00
27	-0.2023688D-02	0.9197722D-01
28	-0.2023688D-02	-0.9197722D-01
29	-0.2023819D-02	0.9197885D-01
30	-0.2023819D-02	-0.9197885D-01

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

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CD	CK1X	CK1Y	CK1Z
20	0.1240000E 06	0.1105000E 06	0.1284000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.5000000E 00	0.5000000E 00	0.1680999E 01

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********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.83007810 02	0.13672090 03
2	-0.83007810 02	-0.13672090 03
3	-0.84397820 02	0.13263530 03
4	-0.84397820 02	-0.13263530 03
5	-0.84268180 02	0.13298390 03
6	-0.84268180 02	-0.13298390 03
7	-0.11256970 03	0.00000000 00
8	-0.98710680 02	0.00000000 00
9	-0.10004680 03	0.00000000 00
10	-0.17112400 02	0.00000000 00
11	-0.16004080 02	0.00000000 00
12	-0.56683980 01	0.00000000 00
13	-0.24244170 01	0.22577720 01
14	-0.24244170 01	-0.22577720 01
15	-0.20957670 01	0.18291690 01
16	-0.20957670 01	-0.18291690 01
17	-0.21142080 01	0.18440430 01
18	-0.21142080 01	-0.18440430 01
19	-0.11395260 01	0.18141310 01
20	-0.11395260 01	-0.18141310 01
21	-0.11394330 01	0.18129300 01
22	-0.11394330 01	-0.18129300 01
23	-0.29920000 00	0.10772550 01
24	-0.29920000 00	-0.10772550 01
25	-0.42948270-01	0.42135610 00
26	-0.42948270-01	-0.42135610 00
27	-0.14938850-02	0.79025180-01
28	-0.14938850-02	-0.79025180-01
29	-0.14937700-02	0.79027560-01
30	-0.14937700-02	-0.79027560-01

CD	A11	A12	A13
8	0.98480800E 00	0.00000000E 00	0.17364800E 00

CD	A21	A22	A23
9	0.00000000E 00	0.10000000E 01	0.00000000E 00

CD	A31	A32	A33
10	-0.17364800E 00	0.00000000E 00	0.98480800E 00

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********** EIGENVALUES **********

121

NUMBER	REAL	IMAG
1	-0.8298240D 02	0.1368049D 03
2	-0.8298240D 02	-0.1368049D 03
3	-0.8454242D 02	0.1322535D 03
4	-0.8454242D 02	-0.1322535D 03
5	-0.8436574D 02	0.1327229D 03
6	-0.8436574D 02	-0.1327229D 03
7	-0.1128235D 03	0.0000000D 00
8	-0.9720298D 02	0.0000000D 00
9	-0.9905236D 02	0.0000000D 00
10	-0.1836152D 02	0.0000000D 00
11	-0.1661099D 02	0.0000000D 00
12	-0.5439970D 01	0.0000000D 00
13	-0.2435863D 01	0.2299730D 01
14	-0.2425863D 01	-0.2299730D 01
15	-0.2079022D 01	0.1815469D 01
16	-0.2079022D 01	-0.1815469D 01
17	-0.2102544D 01	0.1834652D 01
18	-0.2102544D 01	-0.1834652D 01
19	-0.1141834D 01	0.1815726D 01
20	-0.1141834D 01	-0.1815726D 01
21	-0.1141786D 01	0.1814170D 01
22	-0.1141786D 01	-0.1814170D 01
23	-0.2902000D 00	0.1077255D 01
24	-0.2902000D 00	-0.1077255D 01
25	-0.4297238D-01	0.4213499D 00
26	-0.4297238D-01	-0.4213499D 00
27	-0.1459079D-02	0.7809910D-01
28	-0.1459079D-02	-0.7809910D-01
29	-0.1458939D-02	0.7810089D-01
30	-0.1458989D-02	-0.7810089D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

122

NUMBER	REAL	IMAG
1	-0.8296009D 02	0.1368790D 03
2	-0.8296009D 02	-0.1368790D 03
3	-0.8460765D 02	0.1320830D 03
4	-0.8460765D 02	-0.1320830D 03
5	-0.8438427D 02	0.1326741D 03
6	-0.8438427D 02	-0.1326741D 03
7	-0.1130462D 03	0.0000000D 00
8	-0.9651233D 02	0.0000000D 00
9	-0.9806418D 02	0.0000000D 00
10	-0.1894043D 02	0.0000000D 00
11	-0.1696135D 02	0.0000000D 00
12	-0.5244203D 01	0.0000000D 00
13	-0.2443854D 01	0.2339211D 01
14	-0.2443854D 01	-0.2339211D 01
15	-0.2071545D 01	0.1809111D 01
16	-0.2071545D 01	-0.1809111D 01
17	-0.2100599D 01	0.1833102D 01
18	-0.2100599D 01	-0.1833102D 01
19	-0.1142095D 01	0.1816246D 01
20	-0.1142095D 01	-0.1816246D 01
21	-0.1142084D 01	0.1814330D 01
22	-0.1142084D 01	-0.1814330D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4297569D-01	0.4213491D 00
26	-0.4297569D-01	-0.4213491D 00
27	-0.1454785D-02	0.7797942D-01
28	-0.1454785D-02	-0.7797942D-01
29	-0.1454620D-02	0.7798600D-01
30	-0.1454620D-02	-0.7798600D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

123

NUMBER	REAL	IMAG
1	-0.8291574D 02	0.1370268D 03
2	-0.8291574D 02	-0.1370268D 03
3	-0.8451319D 02	0.1323268D 03
4	-0.8451319D 02	-0.1323268D 03
5	-0.8417568D 02	0.1332343D 03
6	-0.8417568D 02	-0.1332343D 03
7	-0.1134686D 03	0.0000000D 00
8	-0.9749240D 02	0.0000000D 00
9	-0.1009844D 03	0.0000000D 00
10	-0.1815136D 02	0.0000000D 00
11	-0.1524721D 02	0.0000000D 00
12	-0.4870690D 01	0.0000000D 00
13	-0.2452372D 01	0.2425921D 01
14	-0.2452373D 01	-0.2425921D 01
15	-0.2079132D 01	0.1813941D 01
16	-0.2079132D 01	-0.1813941D 01
17	-0.2125926D 01	0.1853071D 01
18	-0.2125926D 01	-0.1853071D 01
19	-0.1136416D 01	0.1814056D 01
20	-0.1136416D 01	-0.1814056D 01
21	-0.1136438D 01	0.1811390D 01
22	-0.1136438D 01	-0.1811390D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4291986D-01	0.4213631D 00
26	-0.4291986D-01	-0.4213631D 00
27	-0.1538146D-02	0.8018673D-01
28	-0.1538146D-02	-0.8018673D-01
29	-0.1538150D-02	0.8019136D-01
30	-0.1538150D-02	-0.8019136D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

124

NUMBER	REAL	IMAG
1	-0.82857850 02	0.13722130 03
2	-0.82857850 02	-0.13722130 03
3	-0.84179560 02	0.13321960 03
4	-0.84179560 02	-0.13321960 03
5	-0.83722340 02	0.13451460 03
6	-0.83722340 02	-0.13451460 03
7	-0.11406580 03	0.00030000 00
8	-0.10092290 03	0.00000000 00
9	-0.10551800 03	0.00000000 00
10	-0.15345730 02	0.00000000 00
11	-0.11546370 02	0.00000000 00
12	-0.44247130 01	0.00000000 00
13	-0.24428560 01	0.25541110 01
14	-0.24428560 01	-0.25541110 01
15	-0.21168790 01	0.18425480 01
16	-0.21168790 01	-0.18425480 01
17	-0.22048360 01	0.19203100 01
18	-0.22048360 01	-0.19203100 01
19	-0.11[illegible]0 01	0.18074110 01
20	-0.11[illegible]0 01	-0.18074110 01
21	-0.11[illegible]0 01	0.18037530 01
22	-0.11[illegible]0 01	-0.18037530 01
23	-0.29920000 00	0.10772550 01
24	-0.29920000 00	-0.10772550 01
25	-0.42777490-01	0.42139840 00
26	-0.42777490-01	-0.42139840 00
27	-0.17793700-02	0.86249040-01
28	-0.17793700-02	-0.86249040-01
29	-0.17792840-02	0.86251510-01
30	-0.17792840-02	-0.86251510-01

***** IOG INPUT PARAMETERS *****

CD			
1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.2750000E 00
13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR2X	SR2Y	SR2Z
6	-0.1000000E 01	0.1000000E 01	0.1688993E 01

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********** EIGENVALUES **********

125

NUMBER	REAL	IMAG
1	-0.8303878D 02	0.1366181D 02
2	-0.8303878D 02	-0.1366181D 02
3	-0.8412411D 02	0.1333750D 02
4	-0.8412411D 02	-0.1333750D 02
5	-0.8399498D 02	0.1337342D 02
6	-0.8399498D 02	-0.1337342D 02
7	-0.1122573D 03	0.0000000D 00
8	-0.1014991D 03	0.0000000D 00
9	-0.1027995D 03	0.0000000D 00
10	-0.1484083D 02	0.0000000D 00
11	-0.1376180D 02	0.0000000D 00
12	-0.5972302D 01	0.0000000D 00
13	-0.2402841D 01	0.2202008D 01
14	-0.2402841D 01	-0.2202008D 01
15	-0.2130207D 01	0.1856952D 01
16	-0.2130207D 01	-0.1856952D 01
17	-0.2157187D 01	0.1882627D 01
18	-0.2157187D 01	-0.1882627D 01
19	-0.1139463D 01	0.1812664D 01
20	-0.1139463D 01	-0.1812664D 01
21	-0.1139323D 01	0.1811352D 01
22	-0.1139323D 01	-0.1811352D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4279088D-01	0.4213951D 00
26	-0.4279088D-01	-0.4213951D 00
27	-0.1493360D-02	0.7902536D-01
28	-0.1493360D-02	-0.7902536D-01
29	-0.1493211D-02	0.7902960D-01
30	-0.1493211D-02	-0.7902960D-01

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

********** EIGENVALUES **********

126

NUMBER	REAL	IMAG
1	-0.8298123D 02	0.1368085D 03
2	-0.8298123D 02	-0.1368085D 03
3	-0.8442060D 02	0.1325711D 03
4	-0.8442060D 02	-0.1325711D 03
5	-0.8420936D 02	0.1331401D 03
6	-0.8420936D 02	-0.1331401D 03
7	-0.1128338D 03	0.0000000D 00
8	-0.9845698D 02	0.0000000D 00
9	-0.1006296D 03	0.0000000D 00
10	-0.1735142D 02	0.0000000D 00
11	-0.1555306D 02	0.0000000D 00
12	-0.5440216D 01	0.0000000D 00
13	-0.2433676D 01	0.2296313D 01
14	-0.2433676D 01	-0.2296313D 01
15	-0.2090840D 01	0.1825214D 01
16	-0.2090840D 01	-0.1825214D 01
17	-0.2121110D 01	0.1850362D 01
18	-0.2121110D 01	-0.1850362D 01
19	-0.1144939D 01	0.1816315D 01
20	-0.1144939D 01	-0.1816315D 01
21	-0.1144856D 01	0.1814272D 01
22	-0.1144856D 01	-0.1814272D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4285773D-01	0.4213788D 00
26	-0.4285773D-01	-0.4213788D 00
27	-0.1411906D-02	0.7683917D-01
28	-0.1411906D-02	-0.7683917D-01
29	-0.1411625D-02	0.7684396D-01
30	-0.1411625D-02	-0.7684396D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

127

NUMBER	REAL	IMAG
1	-0.8294113D 02	0.1369418D 03
2	-0.8294113D 02	-0.1369418D 03
3	-0.8462943D 02	0.1320222D 03
4	-0.8462943D 02	-0.1320222D 03
5	-0.8436159D 02	0.1327321D 03
6	-0.8436159D 02	-0.1327321D 03
7	-0.1172342D 03	0.0000000D 00
8	-0.9625858D 02	0.0000000D 00
9	-0.9908574D 02	0.0000000D 00
10	-0.1918483D 02	0.0000000D 00
11	-0.1679710D 02	0.0000000D 00
12	-0.5089912D 01	0.0000000D 00
13	-0.2440970D 01	0.2370314D 01
14	-0.2446970D 01	-0.2370314D 01
15	-0.2067286D 01	0.1805944D 01
16	-0.2067286D 01	-0.1805944D 01
17	-0.2102818D 01	0.1835552D 01
18	-0.2102818D 01	-0.1835552D 01
19	-0.1148041D 01	0.1818671D 01
20	-0.1148041D 01	-0.1818671D 01
21	-0.1148015D 01	0.1816022D 01
22	-0.1148015D 01	-0.1816022D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4289848D-01	0.4213685D 00
26	-0.4289848D-01	-0.4213685D 00
27	-0.1365559D-02	0.7556931D-01
28	-0.1365559D-02	-0.7556931D-01
29	-0.1365343D-02	0.7556615D-01
30	-0.1365343D-02	-0.7556615D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

128

NUMBER	REAL	IMAG
1	-0.8287870D 02	0.1371507D 03
2	-0.8287870D 02	-0.1371507D 03
3	-0.8479167D 02	0.1316034D 03
4	-0.8479167D 02	-0.1316034D 03
5	-0.8440460D 02	0.1326205D 03
6	-0.8440460D 02	-0.1326205D 03
7	-0.1138560D 03	0.0000000D 00
8	-0.9450093D 02	0.0000000D 00
9	-0.9865697D 02	0.0000000D 00
10	-0.2067588D 02	0.0000000D 00
11	-0.1712622D 02	0.0000000D 00
12	-0.4587358D 01	0.0000000D 00
13	-0.2447969D 01	0.2500510D 01
14	-0.2447969D 01	-0.2500510D 01
15	-0.2049894D 01	0.1791061D 01
16	-0.2049894D 01	-0.1791061D 01
17	-0.2099150D 01	0.1832751D 01
18	-0.2099150D 01	-0.1832751D 01
19	-0.1148174D 01	0.1819931D 01
20	-0.1148174D 01	-0.1819931D 01
21	-0.1148231D 01	0.1816161D 01
22	-0.1148231D 01	-0.1816161D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4290444D-01	0.4213671D 00
26	-0.4290444D-01	-0.4213671D 00
27	-0.1362053D-02	0.7546963D-01
28	-0.1362053D-02	-0.7546963D-01
29	-0.1361639D-02	0.7546834D-01
30	-0.1361639D-02	-0.7546834D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

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********** EIGENVALUES **********

129

NUMBER	REAL	IMAG
1	-0.8281809D 02	0.1373554D 03
2	-0.8281809D 02	-0.1373554D 03
3	-0.8464831D 02	0.1319678D 03
4	-0.8464831D 02	-0.1319678D 03
5	-0.8408226D 02	0.1334902D 03
6	-0.8408226D 02	-0.1334902D 03
7	-0.1144604D 03	0.0000000D 00
8	-0.9602741D 02	0.0000000D 00
9	-0.1019194D 03	0.0000000D 00
10	-0.1942597D 02	0.0000000D 00
11	-0.1449447D 02	0.0000000D 00
12	-0.4162098D 01	0.0000000D 00
13	-0.2417925D 01	0.2639222D 01
14	-0.2417925D 01	-0.2639222D 01
15	-0.2060855D 01	0.1798291D 01
16	-0.2060855D 01	-0.1798291D 01
17	-0.2139068D 01	0.1864374D 01
18	-0.2139068D 01	-0.1864374D 01
19	-0.1140036D 01	0.1816816D 01
20	-0.1140036D 01	-0.1816816D 01
21	-0.1140091D 01	0.1811768D 01
22	-0.1140091D 01	-0.1811768D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4208838D-01	0.4213907D 00
26	-0.4208838D-01	-0.4213907D 00
27	-0.1481027D-02	0.7869783D-01
28	-0.1481027D-02	-0.7869783D-01
29	-0.1480890D-02	0.7869725D-01
30	-0.1480890D-02	-0.7869725D-01

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
CD	J1X	J1Y	J1Z
2	0.1542000E 07	0.6944000E 07	0.7543000E 07
CD	J2X	J2Y	J2Z
3	0.5000000E 02	0.5000000E 02	0.5000000E 02
CD	J3X	J3Y	J3Z
4	0.2902000E 04	0.2648000E 04	0.2605000E 04
CD	SR1X	SR1Y	SR1Z
5	0.0000000E 00	0.0000000E 00	0.3750000E 00
CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1688999E 01
CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00
CD	A21	A22	A23
9	0.0007000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01
CD	R120X	R120Y	R120Z
11	0.4150000E 01	0.0000000E 00	0.6731000E 00
CD	RE20X	RE20Y	RE20Z
12	0.0000000E 00	0.0000000E 00	-0.3750000E 00
CD	CDX	CDY	CDZ
13	0.5992999E 02	0.5992999E 02	0.5992999E 02
CD	SDX	SDY	SDZ
14	0.1496000E 02	0.1496000E 02	0.2992000E 02
CD	CKX	CKY	CKZ
15	0.1250000E 03	0.1250000E 03	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.3125000E 02	0.3125000E 02	0.6250000E 02
CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E 00
CD	CKRX	CKRY	CKRZ
18	0.2214000E 05	0.1972000E 05	0.2470000E 05
CD	CKPX	CKPY	CKPZ
19	0.7856000E 05	0.7000000E 05	0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06
CD	SR2X	SR2Y	SR2Z
6	-0.2000000E 01	0.2000000E 01	0.1688999E 01

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********** EIGENVALUES **********

130

NUMBER	REAL	IMAG
1	-0.8410481D 02	0.1763054D 03
2	-0.8410481D 02	-0.1763054D 03
3	-0.8233413D 02	0.1357560D 03
4	-0.8233413D 02	-0.1357560D 03
5	-0.8335914D 02	0.1355886D 03
6	-0.8335914D 02	-0.1355886D 03
7	-0.1105201D 03	0.2773748D 01
8	-0.1105201D 03	-0.2773748D 01
9	-0.1090430D 03	0.0000000D 00
10	-0.8801865D 01	0.0000000D 00
11	-0.7383091D 01	0.2710549D 01
12	-0.7383091D 01	-0.2710549D 01
13	-0.2541059D 01	0.1815886D 01
14	-0.2541059D 01	-0.1815886D 01
15	-0.2100664D 01	0.2183082D 01
16	-0.2100664D 01	-0.2183082D 01
17	-0.2289152D 01	0.2005618D 01
18	-0.2289152D 01	-0.2005618D 01
19	-0.1138915D 01	0.1807060D 01
20	-0.1138915D 01	-0.1807060D 01
21	-0.1138439D 01	0.1805165D 01
22	-0.1138439D 01	-0.1805165D 01
23	-0.2952000D 00	0.1077255D 01
24	-0.2952000D 00	-0.1077255D 01
25	-0.4216029D-01	0.4215486D 00
26	-0.4216029D-01	-0.4215486D 00
27	-0.1491498D-02	0.7902816D-01
28	-0.1491498D-02	-0.7902816D-01
29	-0.1491363D-02	0.7903081D-01
30	-0.1491363D-02	-0.7903081D-01

CD	A11	A12	A13
8	0.9848080E 00	0.0000000E 00	0.1736480E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.1736480E 00	0.0000000E 00	0.9848080E 00

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********** EIGENVALUES **********

131

NUMBER	REAL	IMAG
1	-0.8303738D 02	0.1366196D 03
2	-0.8303738D 02	-0.1366196D 03
3	-0.8382642D 02	0.1342163D 03
4	-0.8382642D 02	-0.1342163D 03
5	-0.8359521D 02	0.1348815D 03
6	-0.8359521D 02	-0.1348815D 03
7	-0.1122600D 03	0.0000000D 00
8	-0.1067452D 03	0.0000000D 00
9	-0.1044975D 03	0.0000000D 00
10	-0.1235611D 02	0.0000000D 00
11	-0.1056822D 02	0.0000000D 00
12	-0.6047664D 01	0.0000000D 00
13	-0.2371644D 01	0.2154200D 01
14	-0.2371644D 01	-0.2154200D 01
15	-0.2258828D 01	0.1984806D 01
16	-0.2258828D 01	-0.1984806D 01
17	-0.2183873D 01	0.1904252D 01
18	-0.2183873D 01	-0.1904252D 01
19	-0.1150463D 01	0.1814445D 01
20	-0.1150463D 01	-0.1814445D 01
21	-0.1150006D 01	0.1811180D 01
22	-0.1150006D 01	-0.1811180D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4237556D-01	0.4214969D 00
26	-0.4237556D-01	-0.4214969D 00
27	-0.1325663D-02	0.7448812D-01
28	-0.1325663D-02	-0.7448812D-01
29	-0.1325114D-02	0.7449267D-01
30	-0.1325114D-02	-0.7449267D-01

CD	A11	A12	A13
8	0.9396930E 00	0.0000000E 00	0.3420200E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.3420200E 00	0.0000000E 00	0.9396930E 00

********** EIGENVALUES **********

132

NUMBER	REAL	IMAG
1	-0.8293742D 02	0.1369529D 03
2	-0.8293742D 02	-0.1369529D 03
3	-0.8422604D 02	0.1330909D 03
4	-0.8422604D 02	-0.1330909D 03
5	-0.8389595D 02	0.1340013D 03
6	-0.8389595D 02	-0.1340013D 03
7	-0.1132669D 03	0.0000000D 00
8	-0.1004414D 03	0.0000000D 00
9	-0.1037345D 03	0.0000000D 00
10	-0.1574720D 02	0.0000000D 00
11	-0.1311369D 02	0.0000000D 00
12	-0.5090198D 01	0.0000000D 00
13	-0.2439852D 01	0.2358926D 01
14	-0.2439852D 01	-0.2358926D 01
15	-0.2113154D 01	0.1844595D 01
16	-0.2113154D 01	-0.1844595D 01
17	-0.2166220D 01	0.1889974D 01
18	-0.2166220D 01	-0.1889974D 01
19	-0.1158088D 01	0.1819856D 01
20	-0.1158088D 01	-0.1819856D 01
21	-0.1157727D 01	0.1815670D 01
22	-0.1157727D 01	-0.1815670D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4253229D-01	0.4214588D 00
26	-0.4253229D-01	-0.4214588D 00
27	-0.1216093D-02	0.7134333D-01
28	-0.1216093D-02	-0.7134333D-01
29	-0.1215646D-02	0.7134351D-01
30	-0.1215646D-02	-0.7134351D-01

CD	A11	A12	A13
8	0.7660440E 00	0.0000000E 00	0.6427880E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.6427880E 00	0.0000000E 00	0.7660440E 00

********** EIGENVALUES **********

133

NUMBER	REAL	IMAG
1	-0.8284631D 02	0.1372592D 03
2	-0.8284631D 02	-0.1372592D 03
3	-0.8469764D 02	0.1318283D 03
4	-0.8469764D 02	-0.1318283D 03
5	-0.8435048D 02	0.1327602D 03
6	-0.8435048D 02	-0.1327602D 03
7	-0.1141772D 03	0.0000000D 00
8	-0.9543259D 02	0.0000000D 00
9	-0.9919232D 02	0.0000000D 00
10	-0.2001212D 02	0.0000000D 00
11	-0.1671647D 02	0.0000000D 00
12	-0.4364857D 01	0.0000000D 00
13	-0.2434096D 01	0.2563525D 01
14	-0.2434096D 01	-0.2563525D 01
15	-0.2051847D 01	0.1793222D 01
16	-0.2051847D 01	-0.1793222D 01
17	-0.2105654D 01	0.1840146D 01
18	-0.2105654D 01	-0.1840146D 01
19	-0.1165536D 01	0.1826063D 01
20	-0.1165536D 01	-0.1826063D 01
21	-0.1165390D 01	0.1820549D 01
22	-0.1165390D 01	-0.1820549D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4270626D-01	0.4214160D 00
26	-0.4270626D-01	-0.4214160D 00
27	-0.1107831D-02	0.6809055D-01
28	-0.1107831D-02	-0.6809055D-01
29	-0.1107188D-02	0.6808671D-01
30	-0.1107188D-02	-0.6808671D-01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8278720D 02	0.1374599D 03
2	-0.8278720D 02	-0.1374599D 03
3	-0.8483522D 02	0.1314705D 03
4	-0.8483522D 02	-0.1314705D 03
5	-0.8439310D 02	0.1326524D 03
6	-0.8439310D 02	-0.1326524D 03
7	-0.1147666D 03	0.0000000D 00
8	-0.9878220D 02	0.0000000D 00
9	-0.9389826D 02	0.0000000D 00
10	-0.2134670D 02	0.0000000D 00
11	-0.1703830D 02	0.0000000D 00
12	-0.3981988D 01	0.0000000D 00
13	-0.2388661D 01	0.2702594D 01
14	-0.2388661D 01	-0.2702594D 01
15	-0.2036579D 01	0.1779880D 01
16	-0.2036579D 01	-0.1779880D 01
17	-0.2103111D 01	0.1838372D 01
18	-0.2103111D 01	-0.1838372D 01
19	-0.1165318D 01	0.1827230D 01
20	-0.1165318D 01	-0.1827230D 01
21	-0.1165283D 01	0.1820509D 01
22	-0.1165283D 01	-0.1820509D 01
23	-0.2992000D 00	0.1077255D 01
24	-0.2992000D 00	-0.1077255D 01
25	-0.4271504D-01	0.4214139D 00
26	-0.4271504D-01	-0.4214139D 00
27	-0.1108620D-02	0.6811203D-01
28	-0.1108620D-02	-0.6811203D-01
29	-0.1108108D-02	0.6811015D-01
30	-0.1108108D-02	-0.6811015D-01

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1324000E 06

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1689000E 02

ORIGINAL PAGE IS
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********** EIGENVALUES **********

135

NUMBER	REAL	IMAG
1	-0.8303382D 02	0.1366603D 03
2	-0.8303382D 02	-0.1366603D 03
3	-0.1124022D 03	0.0000000D 00
4	-0.5248062D 01	0.0000000D 00
5	-0.2568439D 01	0.2515526D 01
6	-0.2568439D 01	-0.2515526D 01
7	-0.1215217D 01	0.1800674D 01
8	-0.1215217D 01	-0.1800674D 01
9	-0.2132458D-03	0.3002563D-01
10	-0.2132458D-03	-0.3002563D-01
11	-0.8287310D 02	0.1371914D 03
12	-0.8287310D 02	-0.1371914D 03
13	-0.1139904D 03	0.0000000D 00
14	-0.4090986D 01	0.0000000D 00
15	-0.2519080D 01	0.2892347D 01
16	-0.2519080D 01	-0.2892347D 01
17	-0.1210506D 01	0.1794089D 01
18	-0.1210506D 01	-0.1794089D 01
19	-0.2132225D-03	0.3003785D-01
20	-0.2132225D-03	-0.3003785D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.3178000E 02

********** EIGENVALUES **********

136

NUMBER	REAL	IMAG
1	-0.8232856D 02	0.1390938D 03
2	-0.8232856D 02	-0.1390938D 03
3	0.1193870D 03	0.0000000D 00
4	-0.1220077D 01	0.3512851D 01
5	-0.1220077D 01	-0.3512851D 01
6	-0.1183417D 01	0.1763889D 01
7	-0.1183417D 01	-0.1763889D 01
8	-0.1078675D-03	0.2149865D-01
9	-0.1078675D-03	-0.2149865D-01
10	-0.2448963D 01	0.0000000D 00
11	-0.8225556D 02	0.1393617D 03
12	-0.8225556D 02	-0.1393617D 03
13	-0.1201143D 03	0.0000000D 00
14	-0.1003867D 01	0.3469288D 01
15	-0.1003867D 01	-0.3469288D 01
16	-0.2316690D 01	0.0000000D 00
17	-0.1175340D 01	0.1759157D 01
18	-0.1175340D 01	-0.1759157D 01
19	-0.1078681D-03	0.2150762D-01
20	-0.1078681D-03	-0.2150762D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.5445000E 02

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********** EIGENVALUES **********

137

NUMBER	REAL	IMAG
1	-0.8193834D 02	0.1405634D 03
2	-0.8193834D 02	-0.1405634D 03
3	-0.1229913D 03	0.0E00000D 00
4	-0.9164441D-01	0.2820418D 01
5	-0.9164441D-01	-0.2820418D 01
6	-0.1116411D 01	0.1739684D 01
7	-0.1116411D 01	-0.1739684D 01
8	-0.4191829D-04	0.1370019D-01
9	-0.4191829D-04	-0.1370019D-01
10	-0.1720520D 01	0.0000000D 00
11	-0.8191158D 02	0.1406676D 03
12	-0.8191158D 02	-0.1406676D 03
13	-0.1235608D 03	0.0000000D 00
14	-0.2312777D-01	0.2715598D 01
15	-0.2312777D-01	-0.2715598D 01
16	-0.1107853D 01	0.1739211D 01
17	-0.1107853D 01	-0.1739211D 01
18	-0.1658805D 01	0.0000000D 00
19	-0.4183965D-04	0.1371095D-01
20	-0.4183965D-04	-0.1371095D-01
21	-0.8299921D 02	0.1367495D 03
22	-0.8299921D 02	-0.1367495D 03
23	-0.1126562D 03	0.0000000D 00
24	-0.5586410D 01	0.0000000D 00
25	-0.2429545D 01	0.2273587D 01
26	-0.2429545D 01	-0.2273587D 01
27	-0.2992000D 00	0.1077255D 01
28	-0.2992000D 00	-0.1077255D 01
29	-0.4300070D-01	0.4213429D 00
30	-0.4300070D-01	-0.4213429D 00

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1689000E 03

********** EIGENVALUES **********

138

NUMBER	REAL	IMAG
1	-0.81816750 02	0.14104090 03
2	-0.81816750 02	-0.14104090 03
3	-0.12451760 03	0.00000000 00
4	0.18741700 00	0.22171230 01
5	0.18741700 00	-0.22171230 01
6	-0.10697400 01	0.17433910 01
7	-0.10697400 01	-0.17433910 01
8	-0.19729330-04	0.96814940-02
9	-0.19729330-04	-0.96814940-02
10	-0.13895660 01	0.00000000 00
11	-0.81803820 02	0.14109220 03
12	-0.81803820 02	-0.14109220 03
13	-0.12464840 03	0.00000000 00
14	0.20996160 00	0.21268170 01
15	0.20996160 00	-0.21268170 01
16	-0.10634310 01	0.17453740 01
17	-0.10634310 01	-0.17453740 01
18	-0.13423750 01	0.00000000 00
19	-0.19677110-04	0.96976250-02
20	-0.19677110-04	-0.96976250-02
21	-0.82999210 02	0.12674950 03
22	-0.82999210 02	-0.12674950 03
23	-0.11265620 03	0.00000000 00
24	-0.55364100 01	0.00000000 00
25	-0.24295450 01	0.22735870 01
26	-0.24295450 01	-0.22735870 01
27	-0.29320000 00	0.10772550 01
28	-0.29320000 00	-0.10772550 01
29	-0.43000700-01	0.42134290 00
30	-0.43000700-01	-0.42134290 00

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***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1542000E 07	0.6944000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2903000E 04	0.2648000E 04	0.2605000E 04
5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1688999F 01
8	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
9	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
11	R120X	R120Y	R120Z
	0.4150000E 01	0.0000000E 00	0.6731000E 00
12	RE20X	RE20Y	RE20Z
	0.0000000E 00	0.0000000E 00	-0.3750000E 00
13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999F 02	0.5992999E 02
14	SDX	SDY	SDZ
	0.1496000E 02	0.1496000E 02	0.2992000E 02
15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
17	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000000E 00
18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GEOMETRIC VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1394000E 06

CD	A11	A12	A13
8	0.5000002E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1689000E 02

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********** EIGENVALUES **********

139

NUMBER	REAL	IMAG
1	-0.8234968D 02	0.1390154D 03
2	-0.8234968D 02	-0.1390154D 03
3	-0.1191719D 03	0.0000000D 00
4	-0.1290097D 01	0.3491356D 01
5	-0.1290097D 01	-0.3491356D 01
6	-0.1170710D 01	0.1767269D 01
7	-0.1170710D 01	-0.1767269D 01
8	-0.1024084D-03	0.4145409D-01
9	-0.4024084D-03	-0.4145409D-01
10	-0.2491938D 01	0.0000000D 00
11	-0.2992030D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8211156D 02	0.1398736D 03
14	-0.8211156D 02	-0.1398736D 03
15	-0.1214727D 03	0.0000000D 00
16	-0.9479578D 00	0.3144785D 01
17	-0.9479578D 00	-0.3144785D 01
18	-0.1167435D 01	0.1761012D 01
19	-0.1167435D 01	-0.1761012D 01
20	-0.3657830D-01	0.4226728D 00
21	-0.3657830D-01	-0.4226728D 00
22	-0.4020765D-03	0.4145332D-01
23	-0.4020765D-03	-0.4145332D-01
24	-0.2068261D 01	0.0000000D 00
25	-0.8259921D 02	0.1367495D 03
26	-0.8259921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.3378000E 02

********** EIGENVALUES **********

140

NUMBER	REAL	IMAG
1	-0.8201602D 02	0.1402827D 03
2	-0.8201683D 02	-0.1402827D 03
3	-0.1225610D 03	0.0000000D 00
4	-0.2926898D 00	0.3041545D 01
5	-0.2926898D 00	-0.3041545D 01
6	-0.1130086D 01	0.1714380D 01
7	-0.1130086D 01	-0.1714380D 01
8	-0.2058798D-03	0.3002639D-01
9	-0.2058798D-03	-0.3002639D-01
10	-0.1871600D 01	0.0000000D 00
11	-0.2993000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8189592D 02	0.1407158D 03
14	-0.8189592D 02	-0.1407158D 03
15	-0.1236796D 03	0.0000000D 00
16	-0.3821478D 00	0.2657952D 01
17	-0.3821478D 00	-0.2657952D 01
18	-0.1127399D 01	0.1735740D 01
19	-0.1127399D 01	-0.1735740D 01
20	-0.1557418D 01	0.0000000D 00
21	-0.2051154D-03	0.3002526D-01
22	-0.2051154D-03	-0.3002526D-01
23	-0.2947853D-01	0.4225214D 00
24	-0.2947853D-01	-0.4225214D 00
25	-0.8299921D 02	0.1267495D 03
26	-0.8299921D 02	-0.1267495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2272587D 01
30	-0.2429545D 01	-0.2272587D 01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.8445000E 02

********** EIGENVALUES **********

141

NUMBER	REAL	IMAG
1	-0.81818750 02	0.14103280 03
2	-0.81818750 02	-0.14103280 03
3	-0.12449710 03	0.00000000 00
4	0.18238260 00	0.22268410 01
5	0.18238260 00	-0.22268410 01
6	-0.10693970 01	0.17438340 01
7	-0.10693970 01	-0.17438340 01
8	-0.78246640-04	0.19277420-01
9	-0.78246640-04	-0.19277420-01
10	-0.13859220 01	0.00000000 00
11	-0.29920000 00	0.10772550 01
12	-0.29920000 00	-0.10772550 01
13	-0.81775090 02	0.14120160 03
14	-0.81775090 02	-0.14120160 03
15	-0.12492410 03	0.00000000 00
16	-0.21038440 00	0.20498970 01
17	-0.21038440 00	-0.20498970 01
18	-0.10643850 01	0.17265880 01
19	-0.10643850 01	-0.17265880 01
20	-0.10766500 01	0.00000000 00
21	-0.84038960-02	0.42233920 00
22	-0.84038960-02	-0.42233920 00
23	-0.77621870-04	0.19295600-01
24	-0.77621870-04	-0.19295600-01
25	-0.82999210 02	0.13674950 03
26	-0.82999210 02	-0.13674950 03
27	-0.11265620 03	0.00000000 00
28	-0.55864100 01	0.00000000 00
29	-0.24295450 01	0.22735870 01
30	-0.24295450 01	-0.22735870 01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1689000E 03

142

EIGENVALUES

NUMBER	REAL	IMAG
1	-0.8175829D 02	0.1412739D 03
2	-0.8175829D 02	-0.1412739D 03
3	-0.1201091D 03	0.0000000D 00
4	0.2639174D 00	0.1727028D 01
5	0.2639174D 00	-0.1727028D 01
6	-0.1016154D 01	0.1757415D 01
7	-0.1016154D 01	-0.1757415D 01
8	-0.1420400D-04	0.1367732D-01
9	-0.1420400D-04	-0.1367732D-01
10	-0.1120478D 01	0.0000000D 00
11	-0.2992000D 00	0.1077255D 01
12	-0.2992000D 00	-0.1077255D 01
13	-0.8173634D 02	0.1413571D 03
14	-0.8173694D 02	-0.1413571D 03
15	-0.1257182D 03	0.0000000D 00
16	-0.1026697D 01	0.1735192D 01
17	-0.1026697D 01	-0.1735192D 01
18	-0.2660960D 00	0.1702943D 01
19	-0.2660960D 00	-0.1702943D 01
20	-0.7777199D 00	0.0000000D 00
21	0.2170085D 01	0.4107744D 00
22	0.2170085D-01	-0.4107744D 00
23	-0.3320832D-04	0.1371261D-01
24	-0.3320832D-04	-0.1371261D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5506410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GEOMETRIC VARIATIONS

CE	CK1X	CK1Y	CK1Z
20	0.1240300E 06	0.1105000E 06	0.1384000E 06

CD	SR1X	SR1Y	SR1Z
5	-0.3750000E 00	0.3750000E 00	0.3750000E 00

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********** EIGENVALUES **********

143

NUMBER	REAL	IMAG
1	-0.8352489D 02	0.1351222D 03
2	-0.8352489D 02	-0.1351222D 03
3	-0.8370912D 02	0.1345699D 03
4	-0.8370912D 02	-0.1345699D 03
5	-0.1075622D 03	0.0000000D 00
6	-0.1057186D 03	0.0000000D 00
7	-0.1121435D 02	0.0000000D 00
8	-0.9573989D 01	0.0000000D 00
9	-0.2295493D 01	0.2016456D 01
10	-0.2295493D 01	-0.2016456D 01
11	-0.2222498D 01	0.1938517D 01
12	-0.2222498D 01	-0.1938517D 01
13	-0.1106983D 01	0.1803378D 01
14	-0.1106983D 01	-0.1803378D 01
15	-0.1032653D 01	0.1744279D 01
16	-0.1032653D 01	-0.1744279D 01
17	-0.2609015D 00	0.1008140D 01
18	-0.2609015D 00	-0.1008140D 01
19	-0.4287920D-01	0.4213733D 00
20	-0.4287920D-01	-0.4213733D 00
21	-0.1393225D-02	0.7631351D-01
22	-0.1393225D-02	-0.7631351D-01
23	-0.1303701D-02	0.7381485D-01
24	-0.1303701D-02	-0.7381485D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

144

NUMBER	REAL	IMAG
1	-0.8223205D 02	0.1394752D 03
2	-0.8223205D 02	-0.1394752D 03
3	-0.8229779D 02	0.1392265D 03
4	-0.8229779D 02	-0.1392265D 03
5	-0.1204330D 03	0.0000000D 00
6	-0.1197578D 03	0.0000000D 00
7	-0.7196909D 00	0.3798772D 01
8	-0.7106909D 00	-0.3798772D 01
9	-0.8816426D 00	0.3581089D 01
10	-0.8816426D 00	-0.3581089D 01
11	-0.1107104D 01	0.1749208D 01
12	-0.1107104D 01	-0.1749208D 01
13	-0.1199196D 01	0.1669141D 01
14	-0.1199196D 01	-0.1669141D 01
15	-0.2245027D 01	0.0000000D 00
16	-0.2362015D 01	0.0000000D 00
17	-0.4174680D 00	0.1212057D 01
18	-0.4174680D 00	-0.1212057D 01
19	-0.4212428D-01	0.4215590D 00
20	-0.4212428D-01	-0.4215590D 00
21	-0.2813855D-02	0.1083661D 00
22	-0.2813855D-02	-0.1083661D 00
23	-0.2478298D-02	0.1018153D 00
24	-0.2478298D-02	-0.1018153D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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***** IOG INPUT PARAMETERS *****

CD			
	M1	M2	M3
1	0.885400UE 05	0.1950000E 03	0.2683000E 04
CD	J1X	J1Y	J1Z
2	0.1542000E 07	0.694400UE 07	0.7543000E 07
CD	J2X	J2Y	J2Z
3	0.5000000E 02	0.5000000E 02	0.5000000E 02
CD	J3X	J3Y	J3Z
4	0.2903000E 04	0.2648000E 04	0.2605000E 04
CD	SR1X	SR1Y	SR1Z
5	0.0000000E 00	0.0000000E 00	0.3750000E 00
CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1688999E 01
CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01
CD	R120X	R120Y	R120Z
11	0.4150000E 01	0.0000000E 00	0.6731000E 00
CD	RE20X	RE20Y	RE20Z
12	0.0000000E 00	0.0000000E 00	-0.3750000E 00
CD	CDX	CDY	CDZ
13	0.5992999E 02	0.5992999E 02	0.5992999E 02
CD	SDX	SDY	SDZ
14	0.1496000E 02	0.1496000E 02	0.2992000E 02
CD	CKX	CKY	CKZ
15	0.1250000E 03	0.1250000E 03	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.3125000E 02	0.3125000E 02	0.6250000E 02
CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E 00
CD	CKRX	CKRY	CKRZ
18	0.2214000E 05	0.1972000E 05	0.2470000E 05
CD	CKPX	CKPY	CKPZ
19	0.7856000E 05	0.7000000E 05	0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR1X	SR1Y	SR1Z
5	0.3750000E 00	-0.3750000E 00	0.3750000E 00

CD	SR2X	SR2Y	SR2Z
6	-0.2000000E 01	0.2000000E 01	0.1608999E 01

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********** EIGENVALUES **********

145

NUMBER	REAL	IMAG
1	-0.8159039D 02	0.1420470D 03
2	-0.8159039D 02	-0.1420470D 03
3	-0.8148791D 02	0.1424778D 03
4	-0.8148791D 02	-0.1424778D 03
5	-0.8254566D 02	0.1382840D 03
6	-0.8254566D 02	-0.1382840D 03
7	-0.1281314D 03	0.0000006D 00
8	-0.1171249D 03	0.0000000D 00
9	-0.1270749D 03	0.0000000D 00
10	0.2753382D 01	0.2766038D 01
11	0.2753382D 01	-0.2766038D 01
12	0.1554861D 01	0.2998442D 01
13	0.1554861D 01	-0.2998442D 01
14	-0.2015168D 01	0.3012573D 01
15	-0.2015168D 01	-0.3012573D 01
16	-0.3069598D 01	0.0000000D 00
17	-0.8528179D 00	0.1640134D 01
18	-0.8528179D 00	-0.1640134D 01
19	-0.1441179D 01	0.1558845D 01
20	-0.1441179D 01	-0.1558845D 01
21	-0.1372740D 01	0.1479158D 01
22	-0.1372740D 01	-0.1479158D 01
23	-0.1277335D 01	0.0000000D 00
24	-0.3840298D-01	0.4223828D 00
25	-0.3840298D-01	-0.4223828D 00
26	-0.4084485D-02	0.1303439D 00
27	-0.4084485D-02	-0.1303439D 00
28	-0.2164448D-02	0.9526151D-01
29	-0.2164448D-02	-0.9526151D-01
30	-0.1326660D 01	0.0000000D 00

CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	0.8660250E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	-0.8660250E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

146

NUMBER	REAL	IMAG
1	-0.8477933D 02	0.1379587D 03
2	-0.8473973D 02	-0.1379587D 03
3	-0.8263738D 02	0.1380168D 03
4	-0.8263738D 02	-0.1380168D 03
5	-0.8084543D 02	0.1368180D 03
6	-0.8084543D 02	-0.1368180D 03
7	-0.1140227D 03	0.5686399D 01
8	-0.1140227D 03	-0.5686399D 01
9	-0.1163967D 03	0.0000000D 00
10	-0.4100084D 01	0.5967033D 01
11	-0.4100684D 01	-0.5967033D 01
12	-0.1987166D 01	0.3687216D 01
13	-0.1987166D 01	-0.3687216D 01
14	-0.3005600D 01	0.0000000D 00
15	-0.2591538D 01	0.1169358D 01
16	-0.2591538D 01	-0.1169358D 01
17	-0.1709800D 01	0.2380119D 01
18	-0.1709800D 01	-0.2380119D 01
19	-0.1248117D 01	0.1770065D 01
20	-0.1248117D 01	-0.1770065D 01
21	-0.1215051D 01	0.1747975D 01
22	-0.1215051D 01	-0.1747975D 01
23	-0.3460869D 00	0.1146155D 01
24	-0.3466869D 00	-0.1146155D 01
25	-0.4200677D-01	0.4215854D 00
26	-0.4200677D-31	-0.4215854D 00
27	-0.1253016D-02	0.7216942D-01
28	-0.1253016D-02	-0.7216942D-01
29	-0.1173219D-02	0.7011964D-01
30	-0.1173219D-02	-0.7011964D-01

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1950000E 03	M3 0.2683000E 04
CD 2	J1X 0.1542000E 07	J1Y 0.6944000E 07	J1Z 0.7543000E 07
CD 3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
CD 4	J3X 0.2903000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
CD 5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
CD 6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
CD 8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
CD 11	R120X 0.4150000E 01	R120Y 0.0000000E 00	R120Z 0.6731000E 00
CD 12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
CD 13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
CD 14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
CD 15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
CD 16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
CD 17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
CD 18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
CD 19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

SYSTEM STABILITY AS A FUNCTION OF GEOMETRIC VARIATIONS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

CD	SR1X	SR1Y	SR1Z
5	0.3750000E 00	-0.3750000E 00	0.3750000E 00

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********** EIGENVALUES **********

217

NUMBER	REAL	IMAG
1	-0.8352469D 02	0.1351222D 03
2	-0.8352489D 02	-0.1351222D 03
3	-0.8370912D 02	0.1345699D 03
4	-0.8370912D 02	-0.1345699D 03
5	-0.1075622D 03	0.0000000D 00
6	-0.1057186D 03	0.0000000D 00
7	-0.1121433D 02	0.0000000D 00
8	-0.9573989D 01	0.0000000D 00
9	-0.2295493D 01	0.2016456D 01
10	-0.2295493D 01	-0.2016456D 01
11	-0.2222499D 01	0.1938518D 01
12	-0.2222499D 01	-0.1938518D 01
13	-0.1106984D 01	0.1803378D 01
14	-0.1106984D 01	-0.1803378D 01
15	-0.1032653D 01	0.1744279D 01
16	-0.1032653D 01	-0.1744279D 01
17	-0.2609011D 00	0.1008139D 01
18	-0.2609011D 00	-0.1008139D 01
19	-0.4287925D-01	0.4213735D 00
20	-0.4287925D-01	-0.4213735D 00
21	-0.1393165D-02	0.7631225D-01
22	-0.1393165D-02	-0.7631225D-01
23	-0.1303630D-02	0.7381282D-01
24	-0.1303630D-02	-0.7381282D-01
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

***** IOG INPUT PARAMETERS *****

CD			
	M1	M2	M3
1	0.8854000E 05	0.1950000E 03	0.2683000E 04
	J1X	J1Y	J1Z
2	0.1542000E 07	0.6944000E 07	0.7543000E 07
	J2X	J2Y	J2Z
3	0.5000000E 02	0.5003000E 02	0.5000000E 02
	J3X	J3Y	J3Z
4	0.2903000E 04	0.2648000E 04	0.2605000E 04
	SR1X	SR1Y	SR1Z
5	0.0000000E 00	0.0000000E 00	0.3750000E 00
	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1688999E 01
	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00
	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01
	R120X	R120Y	R120Z
11	0.4150000E 01	0.0000000E 00	0.6731000E 00
	RE20X	RE20Y	RE20Z
12	0.0000000E 00	0.0000000E 00	-0.3750000E 00
	CDX	CDY	CDZ
13	0.5992999E 02	0.5992999E 02	0.5992999E 02
	SDX	SDY	SDZ
14	0.1496000E 02	0.1496000E 02	0.2992000E 02
	CKX	CKY	CKZ
15	0.1250000E 03	0.1250000E 03	0.1250000E 03
	SKX	SKY	SKZ
16	0.3125000E 02	0.3125000E 02	0.6250000E 02
	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E 00
	CKRX	CKRY	CKRZ
18	0.2214000E 05	0.1972000E 05	0.2470000E 05
	CKPX	CKPY	CKPZ
19	0.7856000E 05	0.7000000E 05	0.8764000E 05

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0 1105000E 06	0.1384000E 06

CD	SR1X	SR1Y	SR1Z
5	0.3750000E 00	-0 3750000E 00	0.3750000E 00

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.2000000E 00	0.1688999E 01

********** EIGENVALUES **********

218

NUMBER	REAL	IMAG
1	-0.8346542D 02	0.1353106D 03
2	-0.8346542D 02	-0.1353106D 03
3	-0.8346852D 02	0.1361398D 03
4	-0.8346852D 02	-0.1361398D 03
5	-0.8295558D 02	0.1360126D 03
6	-0.8295558D 02	-0.1360126D 03
7	-0.1081825D 03	0.0000000D 00
8	-0.1106075D 03	0.8332031D 00
9	-0.1106075D 03	-0.8332031D 00
10	-0.8919729D 01	0.0000000D 00
11	-0.7185730D 01	0.1329354D 01
12	-0.7185730D 01	-0.1329354D 01
13	-0.2530380D 01	0.1964557D 01
14	-0.2530380D 01	-0.1964557D 01
15	-0.2344203D 01	0.2073859D 01
16	-0.2344203D 01	-0.2073859D 01
17	-0.2195999D 01	0.2195736D 01
18	-0.2195999D 01	-0.2195736D 01
19	-0.1113757D 01	0.1802476D 01
20	-0.1113757D 01	-0.1802476D 01
21	-0.1056886D 01	0.1746366D 01
22	-0.1056886D 01	-0.1746366D 01
23	-0.2701493D 00	0.1024140D 01
24	-0.2701493D 00	-0.1024140D 01
25	-0.4284152D-01	0.4213827D 00
26	-0.4284152D-01	-0.4213827D 00
27	-0.1349566D-02	0.7510367D-01
28	-0.1349566D-02	-0.7510367D-01
29	-0.1418745D-02	0.7700905D-01
30	-0.1418745D-02	-0.7700905D-01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.5000000E 00	0.1668999E 01

********** EIGENVALUES **********

219

NUMBER	REAL	IMAG
1	-0.8423664D 02	0.1367852D 03
2	-0.8423664D 02	-0.1367852D 03
3	-0.8319753D 02	0.1361476D 03
4	-0.8319753D 02	-0.1361476D 03
5	-0.8194809D 02	0.1360859D 03
6	-0.8194809D 02	-0.1360859D 03
7	-0.1108399D 03	0.0000000D 00
8	-0.1118142D 03	0.3506543D 01
9	-0.1118142D 03	-0.3506543D 01
10	-0.6163066D 01	0.3501844D 01
11	-0.6163066D 01	-0.3501844D 01
12	-0.6431232D 01	0.0000000D 00
13	-0.2514224D 01	0.2323256D 01
14	-0.2514224D 01	-0.2323256D 01
15	-0.2700863D 01	0.1704124D 01
16	-0.2700863D 01	-0.1704124D 01
17	-0.2043473D 01	0.2272565D 01
18	-0.2043473D 01	-0.2272565D 01
19	-0.1125779D 01	0.1800016D 01
20	-0.1125779D 01	-0.1800016D 01
21	-0.1096131D 01	0.1745762D 01
22	-0.1096131D 01	-0.1745762D 01
23	-0.2860256D 00	0.1050688D 01
24	-0.2860256D 00	-0.1050688D 01
25	-0.4276259D-01	0.4214024D 00
26	-0.4276259D-01	-0.4214024D 00
27	-0.1424707D-02	0.7717216D-01
28	-0.1424707D-02	-0.7717216D-01
29	-0.1458971D-02	0.7809026D-01
30	-0.1458971D-02	-0.7809026D-01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.1000000E 01	0.1688999E 01

220

EIGENVALUES

NUMBER	REAL	IMAG
1	-0.6411101D 02	0.1076270D 03
2	-0.6451121D 02	-0.1076270D 03
3	-0.3284192D 02	0.1072178D 03
4	-0.3284192D 02	-0.1072178D 03
5	0.8123034D 02	0.1066461D 03
6	-0.8123024D 02	-0.1066434D 03
7	-0.1142755D 02	0.0000000D 00
8	-0.1140156D 03	0.4046224D 01
9	-0.1142756D 02	-0.4046224D 01
10	-0.4464544D 01	0.4904.180D 01
11	-0.4464544D 01	-0.4904180D 01
12	-0.2449230D 01	0.3246744D 01
13	-0.2449230D 01	-0.3246744D 01
14	-0.5671252D 01	0.0000000D 00
15	-0.2741691D 01	0.1316428D 01
16	-0.2741691D 01	-0.1316428D 01
17	-0.1824892D 01	0.0775089D 01
18	-0.1824892D 01	-0.0775089D 01
19	-0.1150917D 02	0.1799385D 01
20	-0.1150917D 01	-0.1799385D 01
21	-0.1165335D 01	0.1732582D 01
22	-0.1165335D 01	-0.1732582D 01
23	-0.3195619D 00	0.1101184D 01
24	-0.3195619D 00	-0.1101184D 01
25	-0.4255890D-01	0.4214523D 00
26	-0.4255890D-01	-0.4214523D 00
27	-0.1529656D-02	0.7994435D-01
28	-0.1529656D-02	-0.7994435D-01
29	-0.1571615D-02	0.8103089D-01
30	-0.1571615D-02	-0.8103089D-01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.1500000E 01	0.1688933E 01

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********** EIGENVALUES **********

221

NUMBER	REAL	IMAG
1	-0.8440365D 02	0.1383292D 03
2	-0.8440365D 02	-0.1383292D 03
3	-0.8253303D 02	0.1383899D 03
4	-0.8253303D 02	-0.1383899D 03
5	-0.8093257D 02	0.1373218D 03
6	-0.8093257D 02	-0.1373218D 03
7	-0.1174551D 03	0.0000000D 00
8	-0.1160236D 03	0.4968899D 01
9	-0.1160236D 03	-0.4968899D 01
10	-0.2990692D 01	0.5436625D 01
11	-0.2990692D 01	-0.5436625D 01
12	-0.1652501D 01	0.3874423D 01
13	-0.1652501D 01	-0.3874423D 01
14	-0.1757607D 01	0.2497491D 01
15	-0.1757607D 01	-0.2497491D 01
16	-0.2752639D 01	0.0000000D 00
17	-0.2670838D 01	0.1022832D 01
18	-0.2670838D 01	-0.1022832D 01
19	-0.1230672D 01	0.1703749D 01
20	-0.1230672D 01	-0.1703749D 01
21	-0.1179296D 01	0.1766750D 01
22	-0.1179296D 01	-0.1766750D 01
23	-0.3662080D 00	0.1168872D 01
24	-0.3662080D 00	-0.1168872D 01
25	-0.4223823D-01	0.4215303D 00
26	-0.4223823D-01	-0.4215303D 00
27	-0.1608752D-02	0.8204604D-01
28	-0.1608752D-02	-0.8204604D-01
29	-0.1750539D-02	0.8552423D-01
30	-0.1750539D-02	-0.8552423D-01

CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.2000000E 01	0.1688993E 01

222

NUMBER	REAL	IMAG
1	-0.9404989D 02	0.1200029D 02
2	-0.6404989D 02	-0.1200029D 02
3	-0.8226910D 02	0.1097502D 02
4	-0.8226910D 02	-0.1097502D 02
5	-0.8093426D 02	0.1780172D 02
6	-0.8093426D 02	-0.1780172D 02
7	-0.1201017D 02	0.0000000D 00
8	-0.1177760D 02	0.4241192D 01
9	-0.1177760D 02	-0.4241192D 01
10	-0.2864377D 01	0.5392440D 01
11	-0.1687377D 01	-0.5392440D 01
12	-0.8148915D 00	0.4040772D 01
13	-0.8148915D 00	-0.4040772D 01
14	-0.1867189D 01	0.2672454D 01
15	-0.1867189D 01	-0.2672454D 01
16	-0.2577540D 01	0.7618792D 00
17	-0.2577540D 01	-0.7618792D 00
18	-0.2289105D 01	0.0000000D 00
19	-0.1284758D 01	0.1663033D 01
20	-0.1284758D 01	-0.1663033D 01
21	-0.1205822D 01	0.1707713D 01
22	-0.1205822D 01	-0.1707713D 01
23	-0.4339481D 00	0.1251090D 01
24	-0.4339481D 00	-0.1251090D 01
25	-0.4175447D-01	0.4216465D 00
26	-0.4175447D-01	-0.4216465D 00
27	-0.1695859D-02	0.8426559D-01
28	-0.1695859D-02	-0.8426559D-01
29	-0.1875987D-02	0.8036164D-01
30	-0.1875987D-02	-0.8036164D-01

ID	SP2X	SP2Y	SP2Z
6	-0.2000000E 00	0.0000000E 00	0.1699999E 01

********** EIGENVALUES **********

223

NUMBER	REAL	IMAG
1	-0.8310593D 02	0.1363861D 03
2	-0.8310593D 02	-0.1363861D 03
3	-0.8367828D 02	0.1356245D 03
4	-0.8367828D 02	-0.1356245D 03
5	-0.8310756D 02	0.1354462D 03
6	-0.8310756D 02	-0.1354462D 03
7	-0.1089178D 03	0.9221346D 00
8	-0.1089178D 03	-0.9221346D 00
9	-0.1115394D 03	0.0000000D 00
10	-0.8231248D 01	0.1061501D 01
11	-0.8231248D 01	-0.1061501D 01
12	-0.6849950D 01	0.0000000D 00
13	-0.2471783D 01	0.1954168D 01
14	-0.2471783D 01	-0.1954168D 01
15	-0.2399067D 01	0.2149004D 01
16	-0.2399067D 01	-0.2149004D 01
17	-0.2198911D 01	0.2159678D 01
18	-0.2198911D 01	-0.2159678D 01
19	-0.1056974D 01	0.1746405D 01
20	-0.1056974D 01	-0.1746405D 01
21	-0.1113556D 01	0.1802298D 01
22	-0.1113556D 01	-0.1802298D 01
23	-0.2701562D 00	0.1024137D 01
24	-0.2701562D 00	-0.1024137D 01
25	-0.4283752D-01	0.4213835D 00
26	-0.4283752D-01	-0.4213835D 00
27	-0.1349561D-02	0.7510195D-01
28	-0.1349561D-02	-0.7510195D-01
29	-0.1418661D-02	0.7701068D-01
30	-0.1418661D-02	-0.7701068D-01

CD	SR2X	SR2Y	SR2Z
6	-0.5000000E 00	0.0000000E 00	0.1688999E 01

********** EIGENVALUES **********

224

NUMBER	REAL	IMAG
1	-0.94277190 02	0 13564040 03
2	-0.84107160 02	-0.13564080 03
3	-0.83117100 02	0 13639970 03
4	-0.83117100 02	-0.13639970 03
5	-0.80002940 02	0 13596440 03
6	-0.80002940 02	-0.13596440 03
7	-0.11161410 03	0 00000000 00
8	-0.11140220 03	0 54213700 01
9	-0.11140220 03	0 54213700 01
10	-0.64447120 01	0 10068190 02
11	-0.64947040 01	-0.53960360 01
12	-0.58012120 01	0 30630000 00
13	-0.35450760 01	0 24131630 01
14	-0.23455760 01	-0.24131630 01
15	-0.26611740 01	0 17128750 01
16	-0.20611740 01	-0.17128750 01
17	-0.30540650 01	0 22550570 01
18	-0.28541070 01	-0.22550570 01
19	-0.11248600 01	0 17697070 01
20	-0.11248600 01	-0.17697070 01
21	-0.10906450 01	0 17457150 01
22	-0.10906450 01	-0.17457150 01
23	-0.28604570 00	0 10306740 01
24	-0.28604570 00	-0.10306740 01
25	-0.42750430-04	0 42140450 00
26	-0.42750430-04	-0.42140450 00
27	-0.14248210-02	0 77165710-01
28	-0.14248210-02	-0.77165710-01
29	-0.14586190-02	0 78054170-01
30	-0.14586190-02	-0.78054170-01

CD	SR2X	SR2Y	JAC2
0	-0.10000000E 01	0 00000000E 00	0 16000000E 01

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********** EIGENVALUES **********

225

NUMBER	REAL	IMAG
1	-0.8451705D 02	0.1375270D 03
2	-0.8451705D 02	-0.1375270D 03
3	-0.8279207D 02	0.1374834D 03
4	-0.8279207D 02	-0.1374834D 03
5	-0.8128311D 02	0.1365587D 03
6	-0.8128311D 02	-0.1365587D 03
7	-0.1148584D 03	0.0000000D 00
8	-0.1137297D 03	0.4798164D 01
9	-0.1137297D 03	-0.4798164D 01
10	-0.4659993D 01	0.4901545D 01
11	-0.4659993D 01	-0.4901545D 01
12	-0.2357464D 01	0.3326548D 01
13	-0.2357464D 01	-0.3326548D 01
14	-0.3498275D 01	0.0000000D 00
15	-0.2747430D 01	0.1358567D 01
16	-0.2747430D 01	-0.1358567D 01
17	-0.1903347D 01	0.2366116D 01
18	-0.1903347D 01	-0.2366116D 01
19	-0.1149083D 01	0.1790748D 01
20	-0.1149083D 01	-0.1790748D 01
21	-0.1165832D 01	0.1730716D 01
22	-0.1165832D 01	-0.1730716D 01
23	-0.3196181D 00	0.1103136D 01
24	-0.3196181D 00	-0.1103136D 01
25	-0.4252559D-01	0.4214610D 00
26	-0.4252559D-01	-0.4214610D 00
27	-0.1530034D-02	0.7999692D-01
28	-0.1530034D-02	-0.7999692D-01
29	-0.1571191D-02	0.8102904D-01
30	-0.1571191D-02	-0.8102904D-01

CD	SR2X	SR2Y	SR2Z
6	-0.1500000E 01	0.0000000E 00	0.1683999E 01

********** EIGENVALUES **********

226

NUMBER	REAL	IMAG
1	-0.94402127D 02	0.17824030D 02
2	-0.84402127D 02	-0.17824090D 03
3	-0.82496660D 02	0.13851610D 03
4	-0.82496660D 02	-0.13851610D 03
5	-0.80883360D 02	0.13724460D 03
6	-0.80883360D 02	-0.13724460D 03
7	-0.11780680D 03	0.00000000D 00
8	-0.11578220D 01	0.49111280D 01
9	-0.11578220D 01	-0.49111280D 01
10	-0.31622180D 01	0.50641880D 01
11	-0.31622180D 01	-0.50641880D 01
12	-0.15587310D 01	0.38078750D 01
13	-0.15587310D 01	-0.38078750D 01
14	-0.17837700D 01	0.24969970D 01
15	-0.17837700D 01	-0.24969970D 01
16	-0.27001020D 01	0.10474630D 01
17	-0.27001020D 01	-0.10474630D 01
18	-0.26905010D 01	0.00000000D 00
19	-0.11784450D 01	0.17692230D 01
20	-0.11784450D 01	-0.17692230D 01
21	-0.12290100D 01	0.17012470D 01
22	-0.12290100D 01	-0.17012470D 01
23	-0.76773150D 00	0.11687390D 01
24	-0.36633150D 00	-0.11687390D 01
25	-0.42171860-01	0.42154770D 00
26	-0.42171860-01	-0.42154770D 00
27	-0.17501440-02	0.85525200-01
28	-0.17501440-02	-0.85525200-01
29	-0.16092030-02	0.82044450-01
30	-0.16092030-02	-0.82044450-01

CP	SR2X	SR2Y	SR2Z
6	-0.2000000E 01	0.0000000E 00	0.16889999E 01

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********** EIGENVALUES **********

227

NUMBER	REAL	IMAG
1	-0.8403372D 02	0.1388190D 03
2	-0.8403372D 02	-0.1388190D 03
3	-0.8224318D 02	0.1394431D 03
4	-0.8224318D 02	-0.1394431D 03
5	-0.8099422D 02	0.1379511D 03
6	-0.8099422D 02	-0.1379511D 03
7	-0.1203510D 03	0.0000000D 00
8	-0.1175606D 03	0.4247487D 01
9	-0.1175606D 03	-0.4247487D 01
10	-0.1775172D 01	0.5221189D 01
11	-0.1775172D 01	-0.5221189D 01
12	-0.7516163D 00	0.3992081D 01
13	-0.7516163D 00	-0.3992081D 01
14	-0.1706943D 01	0.2683186D 01
15	-0.1706943D 01	-0.2683186D 01
16	-0.2617154D 01	0.7643457D 00
17	-0.2617154D 01	-0.7643457D 00
18	-0.2252677D 01	0.0000000D 00
19	-0.1280825D 01	0.1666338D 01
20	-0.1280825D 01	-0.1666338D 01
21	-0.1205856D 01	0.1730783D 01
22	-0.1205856D 01	-0.1730783D 01
23	-0.4341841D 00	0.1250736D 01
24	-0.4341841D 00	-0.1250736D 01
25	-0.4163797D-01	0.4216725D 00
26	-0.4163797D-01	-0.4216725D 00
27	-0.1975438D-02	0.9086529D-01
28	-0.1975438D-02	-0.9086529D-01
29	-0.1696100D-02	0.8426270D-01
30	-0.1696100D-02	-0.8426270D-01

CD	SR2X	SR2Y	SR2Z
6	-0.2000000E 00	0.2000000E 00	0.1688999E 01

********** EIGENVALUES **********

228

NUMBER	REAL	IMAG
1	-0.84056770 02	0.13651230 03
2	-0.84056770 02	-0.13651230 03
3	-0.83252800 02	0.13597210 03
4	-0.83252800 02	-0.13597210 03
5	-0.82257510 02	0.13596240 03
6	-0.82257510 02	-0.13596240 03
7	-0.11116820 03	0.27914090 01
8	-0.11116820 03	-0.27914090 01
9	-0.11023460 02	0.00000000 00
10	-0.67000400 01	0.00000000 00
11	-0.67086400 01	0.00000000 00
12	-0.69586650 01	0.00000000 00
13	-0.24701400 01	0.32462700 01
14	-0.24701400 01	-0.32462700 01
15	-0.26275030 01	0.18061910 01
16	-0.26275030 01	-0.18061910 01
17	-0.20916540 01	0.22396700 01
18	-0.20916540 01	-0.22396700 01
19	-0.10828620 01	0.17460810 01
20	-0.10829820 01	-0.17460810 01
21	-0.11211570 01	0.18008710 01
22	-0.11211570 01	-0.18008710 01
23	-0.28044290 00	0.10414670 01
24	-0.28044290 00	-0.10414670 01
25	-0.42798410-01	0.42139330 00
26	-0.42798410-01	-0.42139330 00
27	-0.14451850-02	0.77724780-01
28	-0.14451850-02	-0.77724780-01
29	-0.13988560-02	0.76468700-01
30	-0.13988560-02	-0.76468700-01

CD	SR2X	SR2Y	CR2Z
6	-0.5000000E 00	0.5000000E 00	0.1888999E 01

********** EIGENVALUES **********

229

NUMBER	REAL	IMAG
1	-0.8450127D 02	0.1375304D 03
2	-0.8450127D 02	-0.1375304D 03
3	-0.8285553D 02	0.1372751D 03
4	-0.8285553D 02	-0.1372751D 03
5	-0.8129441D 02	0.1365715D 03
6	-0.8129441D 02	-0.1365715D 03
7	-0.1142520D 03	0.0000000D 00
8	-0.1137505D 03	0.4757372D 01
9	-0.1137505D 03	-0.4757372D 01
10	-0.4657520D 01	0.4894805D 01
11	-0.4657520D 01	-0.4894805D 01
12	-0.2464758D 01	0.3242359D 01
13	-0.2464758D 01	-0.3242359D 01
14	-0.3702174D 01	0.0000000D 00
15	-0.2747465D 01	0.1354792D 01
16	-0.2747465D 01	-0.1354792D 01
17	-0.1899995D 01	0.2365405D 01
18	-0.1899995D 01	-0.2365405D 01
19	-0.1149516D 01	0.1790815D 01
20	-0.1149516D 01	-0.1790815D 01
21	-0.1167038D 01	0.1732013D 01
22	-0.1167038D 01	-0.1732013D 01
23	-0.3195687D 00	0.1103177D 01
24	-0.3195687D 00	-0.1103177D 01
25	-0.4261913D-01	0.4214374D 00
26	-0.4261913D-01	-0.4214374D 00
27	-0.1570888D-02	0.8102704D-01
28	-0.1570888D-02	-0.8102704D-01
29	-0.1530688D-02	0.7999954D-01
30	-0.1530688D-02	-0.7999954D-01

CD	SR2X	SR2Y	SR2Z
6	-0.1000000E 01	0.1000000E 01	0.1688999E 01

230

********** EIGENVALUES **********

NUMBER	REAL	IMAG
1	-0.8413341D 02	0.1387912D 03
2	-0.8413341D 02	-0.1387912D 03
3	-0.8230968D 02	0.1392075D 03
4	-0.8230968D 02	-0.1392075D 03
5	-0.8092184D 02	0.1378740D 03
6	-0.8092184D 02	-0.1378740D 03
7	-0.1197183D 03	0.0000000D 00
8	-0.1174305D 03	0.4498100D 01
9	-0.1174305D 03	-0.4498100D 01
10	-0.1904196D 01	0.5390681D 01
11	-0.1904196D 01	-0.5390681D 01
12	-0.8941010D 00	0.4111829D 01
13	-0.8941010D 00	-0.4111829D 01
14	-0.1689195D 01	0.2650526D 01
15	-0.1689195D 01	-0.2650526D 01
16	-0.2603260D 01	0.8048633D 00
17	-0.2603260D 01	-0.8048633D 00
18	-0.2342661D 01	0.0000000D 00
19	-0.1288977D 01	0.1665385D 01
20	-0.1288977D 01	-0.1665385D 01
21	-0.1210221D 01	0.1733564D 01
22	-0.1210221D 01	-0.1733564D 01
23	-0.4336370D 00	0.1251428D 01
24	-0.4336370D 00	-0.1251428D 01
25	-0.4208476D-01	0.4215676D 00
26	-0.4208476D-01	-0.4215676D 00
27	-0.1697282D-02	0.8425992D-01
28	-0.1697282D-02	-0.8425992D-01
29	-0.1975551D-02	0.9036642D-01
30	-0.1975551D-02	-0.9036642D-01

CD	SR2X	SR2Y	SR2Z
6	-0.1500000E 01	0.1500000E 01	0.1688999E 01

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********** EIGENVALUES **********

231

NUMBER	REAL	IMAG
1	-0.8189485D 02	0.1408002D 03
2	-0.8189485D 02	-0.1408002D 03
3	-0.8217364D 02	0.1398649D 03
4	-0.8217364D 02	-0.1398649D 03
5	-0.8230065D 02	0.1390408D 03
6	-0.8230065D 02	-0.1390408D 03
7	-0.1239302D 03	0.0000000D 00
8	-0.1215405D 03	0.0000000D 00
9	-0.1191774D 03	0.0000000D 00
10	0.6574739D 00	0.4374357D 01
11	0.6574739D 00	-0.4374357D 01
12	0.5199134D 00	0.3851215D 01
13	0.5199134D 00	-0.3851215D 01
14	-0.1836725D 01	0.2994532D 01
15	-0.1836725D 01	-0.2994532D 01
16	-0.2702195D 01	0.0000000D 00
17	-0.1375129D 01	0.1599638D 01
18	-0.1375129D 01	-0.1599638D 01
19	-0.1260458D 01	0.1609535D 01
20	-0.1260458D 01	-0.1609535D 01
21	-0.6635222D 00	0.1459792D 01
22	-0.6635222D 00	-0.1459792D 01
23	-0.1745712D 01	0.0000000D 00
24	-0.4098596D-01	0.4218255D 00
25	-0.4098596D-01	-0.4218255D 00
26	-0.2661516D-02	0.1054429D 00
27	-0.2661516D-02	-0.1054429D 00
28	-0.1903433D-02	0.8927182D-01
29	-0.1903433D-02	-0.8927182D-01
30	-0.2095834D 01	0.0000000D 00

10.0 COINCIDENT GIMBAL STABILITY ANALYSIS

In the process of optimizing the suspension system parameters for the Coincident Gimbal system configuration so as to give reasonable stellar pointing and earth point tracking performance characteristics, one of the earth point tracking runs for a particular set of suspension parameters showed a slow divergence as time progressed and went completely unstable at about 120 seconds into the run. A stability analysis was performed in order to determine whether the Coincident Gimbal system was actually unstable as a function of the gimbal angles that existed around the 120 second region or the instability was numerical in nature since the suspension stiffness was increased significantly resulting in high order dynamics which could not be handled adequately by the 10 msec byte size used in the simulation. The results of the stability analysis indicated that the system was indeed stable and the instability observed on the time simulation was numerical in nature. The data that follows shows the dependence of the Coincident Gimbal eigenvalues as a function of telescope look angle variations upon which the above conclusion was based. The telescope look angles that were investigated were -35, -40, -45, -50, -60, and -90 degrees. In addition, the last set of eigenvalues given in this section are those that result when the pointing control loop is opened at the control torque point.

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
CD	J1X	J1Y	J1Z
2	0.1551000E 07	0.6953000E 07	0.7543000E 07
CD	J2X	J2Y	J2Z
3	0.5030000E 02	0.5000000E 02	0.5000000E 02
CD	J3X	J3Y	J3Z
4	0.2903000E 04	0.2548000E 04	0.2695000E 04
CD	SR1X	SR1Y	SR1Z
5	0.0000000E 00	0.0000000E 00	0.3750000E 00
CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1608999E 01
CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01
CD	R120X	R120Y	R120Z
11	-0.4719999E 01	0.0000000E 00	-0.1579000E 01
CD	RE20X	RE20Y	RE20Z
12	0.0000000E 00	0.0000000E 00	-0.3750000E 00
CD	CDX	CDY	CDZ
13	0.5992999E 02	0.5992999E 02	0.5992999E 02
CD	SDX	SDY	SDZ
14	0.1496000E 02	0.1496000E 02	0.2992000E 02
CD	CKX	CKY	CKZ
15	0.1250000E 03	0.1250000E 03	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.3125000E 02	0.3125000E 02	0.6250000E 02
CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E 00
CD	CKRX	CKRY	CKRZ
18	0.2214000E 05	0.1972000E 05	0.2470000E 05
CD	CKPX	CKPY	CKPZ
19	0.7856000E 05	0.7000000E 05	0.8754000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1334000E 06

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1384500E 03	0.2680000E 04
CD	J2X	J2Y	J2Z
3	0.1269500E 02	0.1631299E 02	0.5417000E 01
CD	SR1X	SR1Y	SR1Z
5	0.1016999E 00	-0.2900000E-02	0.2750000E 00
CD	A11	A12	A13
6	0.9192000E 00	0.0000000E 00	-0.5734000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.5736000E 00	0.0000000E 00	0.8192000E 00
CD	R12X	R12Y	R12Z
11	-0.4822000E 01	0.2900000E-02	-0.1423000E 01
CD	RE2X	RE2Y	RE2Z
12	0.1016999E 00	-0.2900000E-02	-0.5251000E 00
CD	CDX	CDY	CDZ
13	0.2555000E 03	0.2555000E 03	0.1323000E 02
CD	SDX	SDY	SDZ
14	0.2150999E 02	0.2150999E 02	0.1721000E 04
CD	CKX	CKY	CKZ
15	0.2500000E 04	0.2500000E 04	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.2025000E 03	0.2025000E 03	0.1620000E 05

********** EIGENVALUES **********

232

NUMBER	REAL	IMAG
1	-0.2782326D 03	0.0000000D 00
2	-0.9022774D 02	0.1306149D 03
3	-0.9022774D 02	-0.1306149D 03
4	-0.8424788D 02	0.1334793D 03
5	-0.8424788D 02	-0.1334793D 03
6	-0.1024317D 03	0.0000000D 00
7	-0.5556687D 02	0.2321537D 02
8	-0.5556687D 02	-0.2321537D 02
9	-0.1332175D 02	0.1250547D 02
10	-0.1332475D 02	-0.1250547D 02
11	-0.1005253D 02	0.7428911D 01
12	-0.1005253D 02	-0.7428911D 01
13	-0.1241117D 02	0.0000000D 00
14	-0.9431945D 01	0.0000000D 00
15	-0.2027743D 01	0.1721689D 01
16	-0.2027743D 01	-0.1721689D 01
17	-0.2053659D 01	0.1740279D 01
18	-0.2053659D 01	-0.1740279D 01
19	-0.9683343D-02	0.4282175D 00
20	-0.9683342D-02	-0.4282175D 00
21	-0.2245149D-02	0.2086239D 00
22	-0.2245148D-02	-0.2086239D 00
23	-0.2239299D-02	0.2085561D 00
24	-0.2239299D-02	-0.2085561D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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COINCIDENT GIMBAL STABILITY ANALYSIS

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1551000E 07	0.6953000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2903000E 04	0.2649000E 04	0.2505000E 04
5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1688999E 01
8	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
9	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
11	R120X	R120Y	R120Z
	-0.4719999E 01	0.0000000E 00	-0.1579000E 01
12	RE20Y	RE20Y	RE20Z
	0.0000000E 00	0.0000000E 00	-0.3750000E 00
13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
14	SDX	SDY	SDZ
	0.1495000E 02	0.1496003E 02	0.2992000E 02
15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
17	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000000E 00
18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1384500E 03	0.2683000E 04

CD	J2X	J2Y	J2Z
3	0.1269500E 02	0.1631299E 02	0.5417000E 01

CD	SR1X	SR1Y	SR1Z
5	0.1016999E 00	-0.2900000E-02	0.2750000E 00

CD	A11	A12	A13
8	0.8192000E 00	0.0000000E 00	-0.5736003E 00

CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00

CD	A31	A32	A33
10	0.5736000E 00	0.0000000E 00	0.8192000E 00

CD	R120X	R120Y	R120Z
11	-0.4822000E 01	0.2900000E-02	-0.1429000E 01

CD	RE20X	RE20Y	RE20Z
12	0.1016999E 00	-0.2900000E-02	-0.5251000E 00

CD	CDX	CDY	CDZ
13	0.2555000E 03	0.2555000E 03	0.1229000E 02

CD	SDX	SDY	SDZ
14	0.2150999E 02	0.2150999E 02	0.1721000E 04

CD	CKX	CKY	CKZ
15	0.2500000E 04	0.2500000E 04	0.1250000E 03

CD	SKX	SKY	SKZ
16	0.2025000E 03	0.2025000E 02	0.1620000E 05

CD	A11	A12	A13
9	0.7660000E 00	0.0000000E 00	-0.6428000E 00

CD	A31	A32	A33
10	0.6428000E 00	0.0000000E 00	0.7660000E 00

********** EIGENVALUES **********

233

NUMBER	REAL	IMAG
1	-0.27854200 03	0.00000000 00
2	-0.90220930 02	0.13147510 03
3	-0.90220930 02	-0.13147510 03
4	-0.84026390 02	0.13421720 03
5	-0.84026390 02	-0.13421720 03
6	-0.10512950 03	0.00000000 00
7	-0.55403210 02	0.19552720 02
8	-0.55403210 02	-0.19552720 02
9	-0.12797900 02	0.12160780 02
10	-0.12797900 02	-0.12160780 02
11	-0.10084070 02	0.72988490 01
12	-0.10084070 02	-0.72988490 01
13	-0.11183960 02	0.00000000 00
14	-0.93712000 01	0.00000000 00
15	-0.20420930 01	0.17319060 01
16	-0.20420930 01	-0.17319060 01
17	-0.20721230 01	0.17535580 01
18	-0.20721230 01	-0.17535580 01
19	-0.96674310-02	0.42835230 00
20	-0.96674310-02	-0.42835230 00
21	-0.23349790-02	0.21288680 00
22	-0.23349790-02	-0.21288680 00
23	-0.23302160-02	0.21284390 00
24	-0.23302160-02	-0.21284390 00
25	-0.82999210 02	0.13674950 03
26	-0.82999210 02	-0.13674950 03
27	-0.11265620 03	0.00000000 00
28	-0.55864100 01	0.00000000 00
29	-0.24295450 01	0.22735870 01
30	-0.24295450 01	-0.22735870 01

109

***** IOG INPUT PARAMETERS *****

CD			
1	M1 0.8854000E 05	M2 0.1930000E 02	M3 0.2683000E 04
2	J1X 0.1551000E 07	J1Y 0.6953000E 07	J1Z 0.7543000E 07
3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
4	J3X 0.2903000E 04	J3Y 0.2548000E 04	J3Z 0.2605000E 04
5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.3750000E 00
6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
11	R120X -0.4719999E 01	R120Y 0.0000000E 00	R120Z -0.1579000E 01
12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
19	CKPX 0.7856000E 05	CKPY 0.7000000E 05	CKPZ 0.8764000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

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***** IOG INPUT PARAMETERS *****

CD 1	M1 0.8854000E 05	M2 0.1384500E 03	M3 0.2693000E 04
CD 3	J2X 0.1269500E 02	J2Y 0.1631299E 02	J2Z 0.5417000E 01
CD 5	SR1X 0.1016999E 00	SR1Y -0.2900000E 02	SR1Z 0.2750300E 00
CD 8	A11 0.8192000E 00	A12 0.0000000E 00	A13 -0.5736000E 00
CD 9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
CD 10	A31 0.5736000E 00	A32 0.0000000E 00	A33 0.8192000E 00
CD 11	R120X -0.4821000E 01	R120Y 0.2900000E-02	R120Z -3.1429000E 01
CD 12	RE20X 0.1016999E 00	RE20Y -0.2900000E-02	RE20Z -0.5251000E 00
CD 13	CDX 0.2655000E 03	CDY 0.2655000E 03	CDZ 0.1328000E 02
CD 14	SDX 0.2150999E 02	SDY 0.2150999E 02	SDZ 0.1721000E 04
CD 15	CKX 0.2500000E 04	CKY 0.2500000E 04	CKZ 0.1250000E 03
CD 16	SKX 0.2025000E 03	SKY 0.2025000E 03	SKZ 0.1620000E 05
CD 8	A11 0.7071000E 00	A12 0.0000000E 00	A13 -0.7071000E 00
CD 10	A31 0.7071000E 00	A32 0.0000000E 00	A33 0.7071000E 00

********** EIGENVALUES **********

234

NUMBER	REAL	IMAG
1	-0.2788210D 03	0.0000000D 00
2	-0.9014862D 02	0.1323572D 03
3	-0.9014862D 02	-0.1323572D 03
4	-0.8380954D 02	0.1349577D 03
5	-0.8380954D 02	-0.1349577D 03
6	-0.1076978D 03	0.0000000D 00
7	-0.5531538D 02	0.1439344D 02
8	-0.5531538D 02	-0.1439344D 02
9	-0.1222271D 02	0.1360244D 02
10	-0.1222271D 02	-0.1360244D 02
11	-0.1012457D 02	0.7132684D 01
12	-0.1012457D 02	-0.7132684D 01
13	-0.9295191D 01	0.0000000D 00
14	-0.1017087D 02	0.0000000D 00
15	-0.2060037D 01	0.1744664D 01
16	-0.2060037D 01	-0.1744664D 01
17	-0.2094756D 01	0.1770228D 01
18	-0.2094756D 01	-0.1770228D 01
19	-0.9649585D-02	0.4284984D 00
20	-0.9649585D-02	-0.4284984D 00
21	-0.2443905D-02	0.2181002D 00
22	-0.2443905D-02	-0.2181002D 00
23	-0.2440145D-02	0.2179965D 00
24	-0.2440145D-02	-0.2179965D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000300D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1551000E 07	0.6953000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2903000E 04	0.2648000E 04	0.2605000E 04
5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1688999E 01
8	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
9	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
10	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
11	R120X	R120Y	R120Z
	-0.4719999E 01	0.0000000E 00	-0.1579000E 01
12	RE20X	RE20Y	RE20Z
	0.0000000E 00	0.0000000E 00	-0.3750000E 00
13	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
14	SDX	SDY	SDZ
	0.1496000E 02	0.1456000E 02	0.2992000E 02
15	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
16	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
17	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000000E 00
18	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
19	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000000E 05	0.8764000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8854000E 05	0.1384500E 03	0.2683000E 04
CD	J2X	J2Y	J2Z
3	0.1269500E 02	0.1631299E 02	0.5417000E 01
CD	SR1X	SR1Y	SR1Z
5	0.1016999E 00	-0.2900000E-02	0.2750000E 00
CD	A11	A12	A13
8	0.8192000E 00	0.0000000E 00	-0.5735000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.5735000E 00	0.0000000E 00	0.8192000E 00
CD	R10X	R10Y	R10Z
11	-0.4822000E 01	0.2300000E-02	-0.1429000E 01
CD	RE0X	RE0Y	RE0Z
12	0.1016999E 00	-0.2900000E-02	-0.5251000E 00
CD	CDX	CDY	CDZ
13	0.2655000E 03	0.2655000E 03	0.1228000E 02
CD	SDX	SDY	SDZ
14	0.2150999E 02	0.2150999E 02	0.1721000E 04
CD	CKY	CKY	CKZ
15	0.2500000E 04	0.2500000E 04	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.2025000E 03	0.2025000E 03	0.1620000E 05
CD	A11	A12	A13
9	0.6428000E 00	0.0000000E 00	-0.7660000E 00
CD	A31	A32	A33
10	0.7660000E 00	0.0000000E 00	0.6428000E 00

********** EIGENVALUES **********

235

NUMBER	REAL	IMAG
1	-0.2790682D 03	0.0000000D 00
2	-0.9001644D 02	0.1332548D 03
3	-0.9001644D 02	-0.1332548D 03
4	-0.8359682D 02	0.1257010D 03
5	-0.8359682D 02	-0.1257010D 03
6	-0.1101448D 03	0.0000000D 00
7	-0.5529395D 02	0.3841959D 01
8	-0.5529395D 02	-0.3841959D 01
9	-0.1164224D 02	0.1387001D 02
10	-0.1164224D 02	-0.1387001D 02
11	-0.1018201D 02	0.6918837D 01
12	-0.1018201D 02	-0.6918837D 01
13	-0.9195129D 01	0.0000000D 00
14	-0.9263266D 01	0.0000000D 00
15	-0.2082636D 01	0.1761138D 01
16	-0.2082636D 01	-0.1761138D 01
17	-0.2123054D 01	0.1792032D 01
18	-0.2123054D 01	-0.1792032D 01
19	-0.9626310D-02	0.4286640D 00
20	-0.9626310D-02	-0.4286640D 00
21	-0.2577723D-02	0.2240698D 00
22	-0.2577723D-02	-0.2240698D 00
23	-0.2573698D-02	0.2239623D 00
24	-0.2573698D-02	-0.2239623D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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***** IOG INPUT PARAMETERS *****

CD			
1	M1 0.8254000E 05	M2 0.1950000E 03	M3 0.2607000E 04
2	J1X 0.1551000E 07	J1Y 0.6951000E 07	J1Z 0.7513000E 07
3	J2X 0.5000000E 02	J2Y 0.5000000E 02	J2Z 0.5000000E 02
4	J3X 0.2901000E 04	J3Y 0.2648000E 04	J3Z 0.2605000E 04
5	SR1X 0.0000000E 00	SR1Y 0.0000000E 00	SR1Z 0.2750000E 00
6	SR2X 0.0000000E 00	SR2Y 0.0000000E 00	SR2Z 0.1688999E 01
8	A11 0.1000000E 01	A12 0.0000000E 00	A13 0.0000000E 00
9	A21 0.0000000E 00	A22 0.1000000E 01	A23 0.0000000E 00
10	A31 0.0000000E 00	A32 0.0000000E 00	A33 0.1000000E 01
11	R120X -0.4719999E 01	R120Y 0.0000000E 00	R120Z -0.1579000E 01
12	RE20X 0.0000000E 00	RE20Y 0.0000000E 00	RE20Z -0.3750000E 00
13	CDX 0.5992999E 02	CDY 0.5992999E 02	CDZ 0.5992999E 02
14	SDX 0.1496000E 02	SDY 0.1496000E 02	SDZ 0.2992000E 02
15	CKX 0.1250000E 03	CKY 0.1250000E 03	CKZ 0.1250000E 03
16	SKX 0.3125000E 02	SKY 0.3125000E 02	SKZ 0.6250000E 02
17	OMGNT 0.1257000E 03	OMGNS 0.1634000E 03	ZETAS 0.5000000E 00
18	CKRX 0.2214000E 05	CKRY 0.1972000E 05	CKRZ 0.2470000E 05
19	CKPX 0.7956000E 05	CKPY 0.7000000E 05	CKPZ 0.8794000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

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***** IOG INPUT PARAMETERS *****

CD	M1	M2	M3
1	0.8054000E 05	0.1384500E 03	0.2683000E 04
CD	J2X	J2Y	J2Z
3	0.1269500E 02	0.1631299E 02	0.5417000E 01
CD	SR1X	SR1Y	SR1Z
5	0.1016599E 00	-0.2900800E-02	0.2750000E 00
CD	A11	A12	A13
8	0.8192000E 00	0.0000000E 00	-0.5736000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.5736000E 00	0.0000000E 00	0.8192000E 00
CD	R120X	R120Y	R120Z
11	-0.4822000E 01	0.2900000E 02	-0.1423000E 01
CD	RE20X	RE20Y	RE20Z
12	0.1016599E 00	-0.2900000E-02	-0.5251000E 00
CD	CDX	CDY	CDZ
13	0.2655000E 03	0.2655000E 03	0.1328000E 02
CD	SDX	SDY	SDZ
14	0.2150899E 02	0.2150599E 02	0.1721000E 04
CD	CKX	CKY	CKZ
15	0.2500000E 04	0.2500000E 04	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.2025000E 03	0.2025000E 03	0.1620000E 05
CD	A11	A12	A13
8	0.5000000E 00	0.0000000E 00	-0.8660000E 00
CD	A31	A32	A33
10	0.8660000E 00	0.0000000E 00	0.5000000E 00

********** EIGENVALUES **********

236

NUMBER	REAL	IMAG
1	-0.2794609D 03	0.0000000D 00
2	-0.8960053D 02	0.1350689D 03
3	-0.8960053D 02	-0.1350689D 03
4	-0.8319037D 02	0.1371724D 03
5	-0.8319037D 02	-0.1371724D 03
6	-0.1146972D 03	0.0000000D 00
7	-0.7579496D 02	0.0000000D 00
8	-0.3497310D 02	0.0000000D 00
9	-0.1056012D 02	0.1400578D 02
10	-0.1056012D 02	-0.1400578D 02
11	-0.1042070D 02	0.6273851D 01
12	-0.1042070D 02	-0.6273851D 01
13	-0.3847757D 01	0.0000000D 00
14	-0.7555446D 01	0.0000000D 00
15	-0.2148553D 01	0.1812283D 01
16	-0.2148553D 01	-0.1812283D 01
17	-0.2204101D 01	0.1861982D 01
18	-0.2204101D 01	-0.1861982D 01
19	-0.9568961D-02	0.4290804D 00
20	-0.9568961D-02	-0.4290804D 00
21	-0.2931537D-02	0.2396008D 00
22	-0.2931537D-02	-0.2396008D 00
23	-0.2934626D-02	0.2391799D 00
24	-0.2934626D-02	-0.2391799D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
2	J1X	J1Y	J1Z
	0.1551000E 07	0.6953000E 07	0.7543000E 07
3	J2X	J2Y	J2Z
	0.5000000E 02	0.5000000E 02	0.5000000E 02
4	J3X	J3Y	J3Z
	0.2302000E 04	0.2648000E 04	0.2600000E 04
5	SR1X	SR1Y	SR1Z
	0.0000000E 00	0.0000000E 00	0.3750000E 00
6	SR2X	SR2Y	SR2Z
	0.0000000E 00	0.0000000E 00	0.1689999E 01
7	A11	A12	A13
	0.1000000E 01	0.0000000E 00	0.0000000E 00
8	A21	A22	A23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
9	A31	A32	A33
	0.0000000E 00	0.0000000E 00	0.1000000E 01
10	R120X	R120Y	R120Z
	-0.4719999E 01	0.0000000E 00	-0.1579000E 01
11	RE20X	RE20Y	RE20Z
	0.0000000E 00	0.0000000E 00	-0.3750000E 00
12	CDX	CDY	CDZ
	0.5992999E 02	0.5992999E 02	0.5992999E 02
13	SDX	SDY	SDZ
	0.1496000E 02	0.1496000E 02	0.2992000E 02
14	CKX	CKY	CKZ
	0.1250000E 03	0.1250000E 03	0.1250000E 03
15	SKX	SKY	SKZ
	0.3125000E 02	0.3125000E 02	0.6250000E 02
16	OMGNT	OMGNS	ZETAS
	0.1257000E 03	0.1634000E 03	0.5000000E 00
17	CKRX	CKRY	CKRZ
	0.2214000E 05	0.1972000E 05	0.2470000E 05
18	CKPX	CKPY	CKPZ
	0.7856000E 05	0.7000300E 05	0.8764000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

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***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1384500E 03	0.2683000E 01
2	J2X	J2Y	J2Z
	0.1269500E 02	0.1631099E 02	0.5417000E 01
5	SR1X	SR1Y	SR1Z
	0.1016999E 00	-0.2900000E-02	0.2750000E 00
9	R11	R12	R13
	0.8192000E 00	0.0000000E 00	-0.5736000E 00
9	R21	R22	R23
	0.0000000E 00	0.1000000E 01	0.0000000E 00
10	R31	R32	R33
	0.5736000E 00	0.0000000E 00	0.8192000E 00
11	R12GX	R12GY	R12GZ
	-0.4882000E 01	0.2900000E-02	-0.1409000E 01
12	RE20X	RE20Y	RE20Z
	0.1016999E 03	-0.2900000E-02	-0.5251000E 00
13	CDX	CDY	CDZ
	0.2655000E 03	0.2655000E 03	0.1728000E 02
14	SDX	SDY	SDZ
	0.2150999E 02	0.2150999E 02	0.1721000E 04
15	CKX	CKY	CKZ
	0.2500000E 04	0.2500000E 04	0.1250000E 03
16	SKX	SKY	SKZ
	0.2025000E 03	0.2025000E 03	0.1620000E 05
9	A11	A12	A13
	0.0000000E 00	0.0000000E 00	-0.1000000E 01
10	A31	A32	A33
	0.1000000E 01	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

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NUMBER	REAL	IMAG
1	-0.2797626D 03	0.0000000D 00
2	-0.8755657D 02	0.1402385D 03
3	-0.8755657D 02	-0.1402385D 03
4	-0.8215965D 02	0.1412089D 03
5	-0.8215965D 02	-0.1412089D 03
6	-0.1256978D 03	0.0000000D 00
7	-0.1008702D 03	0.0000000D 00
8	-0.1472518D 02	0.8254933D 01
9	-0.1472518D 02	-0.8254933D 01
10	-0.8713783D 01	0.1250283D 02
11	-0.8713783D 01	-0.1250283D 02
12	-0.1073734D 02	0.0000000D 00
13	-0.2164006D 01	0.2986688D 01
14	-0.2164006D 01	-0.2986688D 01
15	-0.2001031D 01	0.3031885D 01
16	-0.2001031D 01	-0.3031885D 01
17	-0.3144384D 01	0.0000000D 00
18	-0.2787475D 01	0.0000000D 00
19	-0.8954926D-02	0.4318323D 00
20	-0.8954926D-02	-0.4318323D 00
21	-0.5700576D-02	0.3382747D 00
22	-0.5700576D-02	-0.3382747D 00
23	-0.5933286D-02	0.3347384D 00
24	-0.5933286D-02	-0.3347384D 00
25	-0.8299921D 02	0.1367495D 03
26	-0.8299921D 02	-0.1367495D 03
27	-0.1126562D 03	0.0000000D 00
28	-0.5586410D 01	0.0000000D 00
29	-0.2429545D 01	0.2273587D 01
30	-0.2429545D 01	-0.2273587D 01

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***** IOG INPUT PARAMETERS *****

CD			
1	M1	M2	M3
	0.8854000E 05	0.1950000E 03	0.2683000E 04
CD	J1X	J1Y	J1Z
2	0.1551000E 07	0.6953000E 07	0.7543000E 07
CD	J2X	J2Y	J2Z
3	0.5000000E 02	0.5000000E 02	0.5000000E 02
CD	J3X	J3Y	J3Z
4	0.2933000E 04	0.2549000E 04	0.2605000E 04
CD	SR1X	SR1Y	SR1Z
5	0.0000000E 00	0.0000000E 00	0.3750000E 00
CD	SR2X	SR2Y	SR2Z
6	0.0000000E 00	0.0000000E 00	0.1688999E 01
CD	A11	A12	A13
8	0.1000000E 01	0.0000000E 00	0.0000000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.0000000E 00	0.0000000E 00	0.1000000E 01
CD	R120X	R120Y	R120Z
11	-0.4719999E 01	0.0000000E 00	-0.1579000E 01
CD	RE20X	RE20Y	RE20Z
12	0.0000000E 00	0.0000000E 00	-0.3750000E 00
CD	CDX	CDY	CDZ
13	0.5992999E 02	0.5992999E 02	0.5992999E 02
CD	SDX	SDY	SDZ
14	0.1496000E 02	0.1496000E 02	0.2992000E 02
CD	CKX	CKY	CKZ
15	0.1250000E 03	0.1250000E 03	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.3125000E 02	0.3125000E 02	0.6250000E 02
CD	OMGNT	OMGNS	ZETAS
17	0.1257000E 03	0.1634000E 03	0.5000000E 00
CD	CKRX	CKRY	CKRZ
18	0.2214000E 05	0.1972000E 05	0.2470000E 05
CD	CKPX	CKPY	CKPZ
19	0.7856000E 05	0.7000000E 05	0.8764000E 05

COINCIDENT GIMBAL STABILITY ANALYSIS

CD	CKIX	CKIY	CKIZ
20	0.1240000E 06	0.1105000E 06	0.1384000E 06

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***** IOG INPUT PARAMETERS *****

CD			
	M1	M2	M3
1	0.8854000E 05	0.1384500E 03	0.2683000E 04
CD	J2X	J2Y	J2Z
3	0.1269500E 02	0.1631299E 02	0.5417000E 01
CD	SR1X	SR1Y	SR1Z
5	0.1016999E 00	-0.2900000E-02	0.2750000E 00
CD	A11	A12	A13
8	0.8192000E 00	0.0000000E 00	-0.5736000E 00
CD	A21	A22	A23
9	0.0000000E 00	0.1000000E 01	0.0000000E 00
CD	A31	A32	A33
10	0.5736000E 00	0.0000000E 00	0.8192000E 00
CD	R120X	R120Y	R120Z
11	-0.4822000E 01	0.2900000E-02	-0.1429000E 01
CD	RE20X	RE20Y	RE20Z
12	0.1016999E 00	-0.2900000E-02	-0.5251000E 00
CD	CDX	CDY	CDZ
13	0.2655000E 03	0.2655000E 03	0.1328000E 02
CD	SDX	SDY	SDZ
14	0.2150999E 02	0.2150999E 02	0.1721000E 04
CD	CKX	CKY	CKZ
15	0.2500000E 04	0.2500000E 04	0.1250000E 03
CD	SKX	SKY	SKZ
16	0.2025000E 03	0.2025000E 03	0.1620000E 05
CD	CKRX	CKRY	CKRZ
18	0.0000000E 00	0.0000000E 00	0.0000000E 00
CD	CKPX	CKPY	CKPZ
19	0.0000000E 00	0.0000000E 00	0.0000000E 00
CD	CKIX	CKIY	CKIZ
20	0.0000000E 00	0.0000000E 00	0.0000000E 00

********** EIGENVALUES **********

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NUMBER	REAL	IMAG
1	0.00000000D 00	0.00000000D 00
2	0.00000000D 00	0.00000000D 00
3	0.00000000D 00	0.00000000D 00
4	0.00000000D 00	0.00000000D 00
5	0.00000000D 00	0.00000000D 00
6	0.00000000D 00	0.00000000D 00
7	0.00000000D 00	0.00000000D 00
8	0.00000000D 00	0.00000000D 00
9	0.00000000D 00	0.00000000D 00
10	-0.2744478D 03	0.00000000D 00
11	-0.1504146D 02	0.7551030D 01
12	-0.1504146D 02	-0.7551030D 01
13	-0.1247673D 02	0.8904846D 01
14	-0.1247673D 02	-0.8904846D 01
15	-0.9747504D 01	0.00000000D 00
16	-0.2009931D-01	0.6148061D 00
17	-0.2009931D-01	-0.6148061D 00
18	-0.2498081D-01	0.6853308D 00
19	-0.2498081D-01	-0.6853308D 00
20	-0.7987120D-02	0.3876447D 00
21	-0.7987120D-02	-0.3876447D 00
22	-0.8170002D 02	0.1415085D 03
23	-0.8170002D 02	-0.1415085D 03
24	-0.1257001D 03	0.00000000D 00
25	-0.8170002D 02	0.1415085D 03
26	-0.8170002D 02	-0.1415085D 03
27	-0.1257001D 03	0.00000000D 00
28	-0.8170002D 02	0.1415085D 03
29	-0.8170002D 02	-0.1415085D 03
30	-0.1257001D 03	0.00000000D 00

11. IPS EARTH POINT TRACKING PERFORMANCE

Figures 11-1 through 11-126 show IPS Coincident Gimbal configuration earth point tracking performance for various orbital altitudes with a 2 Hz pointing control loop bandwidth. The recommended suspension parameters referred to on the figure are those given in section 11 of the main body of the final report and are repeated here for convenience.

$K_x = K_y = 2000$ n/m

$K_z = 500$ n/m

$D_x = D_y = 475.2 \frac{\text{n-sec}}{\text{m}}$

$D_z = 118.8 \frac{\text{n-sec}}{\text{m}}$

$k_x = k_y = 202.5 \frac{\text{n-m}}{\text{rad}}$

$k_z = 3.242 \times 10^3 \frac{\text{n-m}}{\text{rad}}$

$d_x = d_y = 48.11$ n-m-sec

$d_z = 769.8$ n-m-sec

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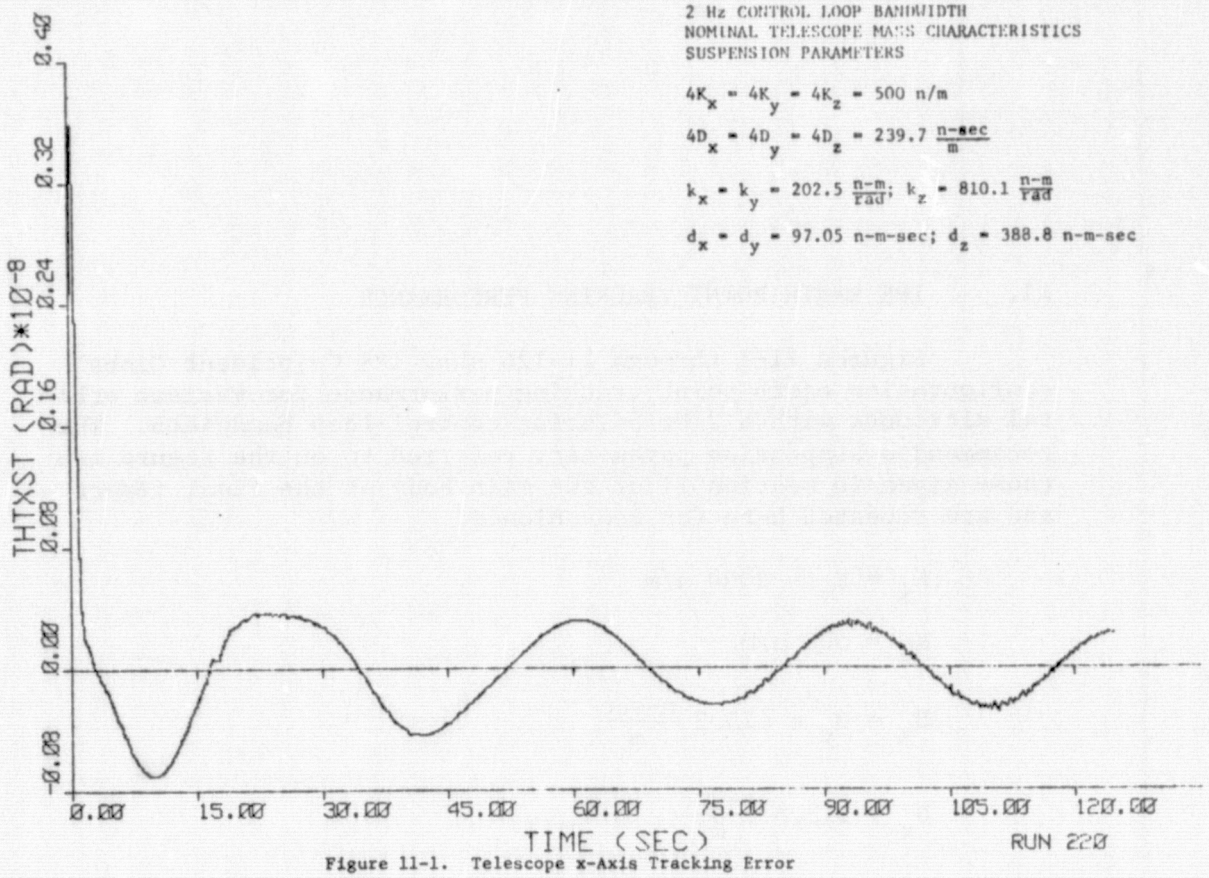


Figure 11-1. Telescope x-Axis Tracking Error

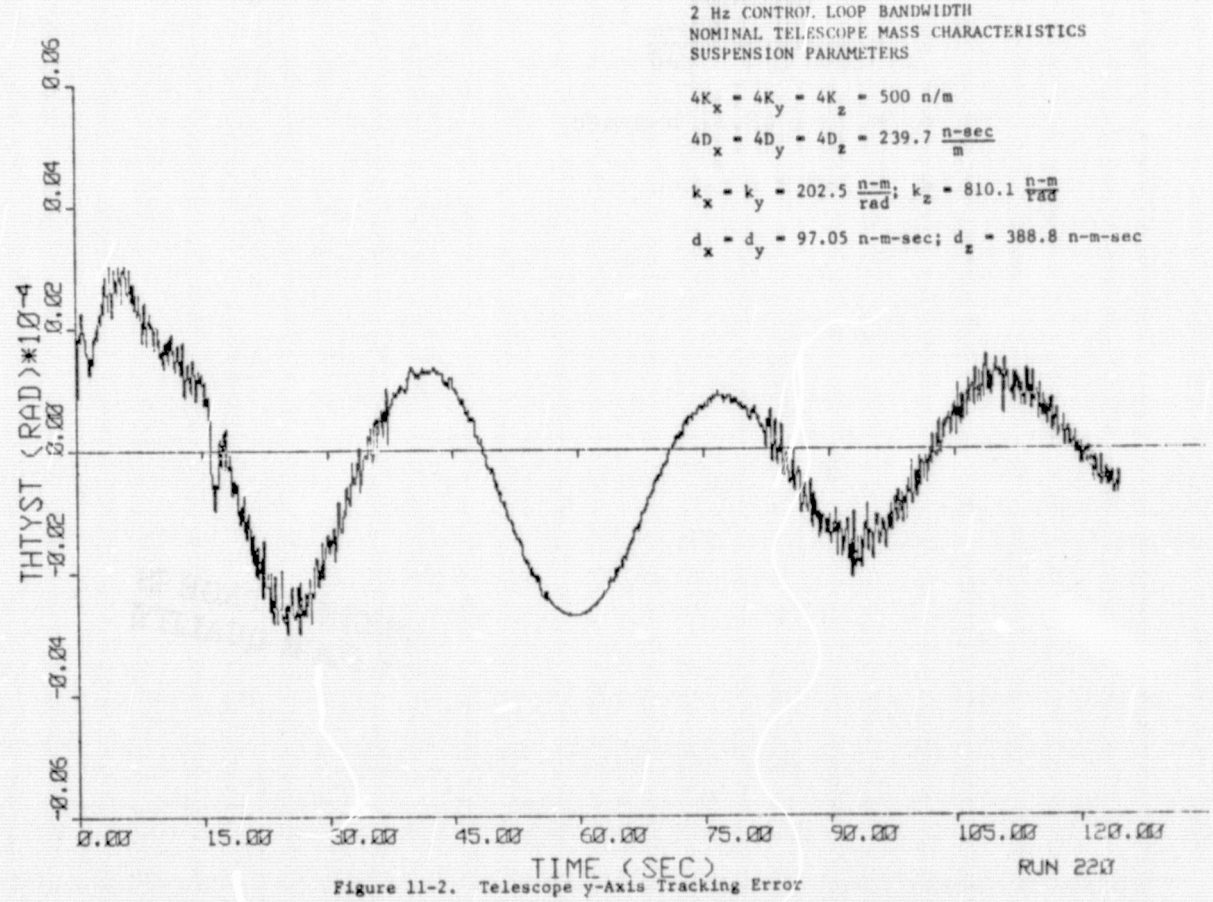


Figure 11-2. Telescope y-Axis Tracking Error

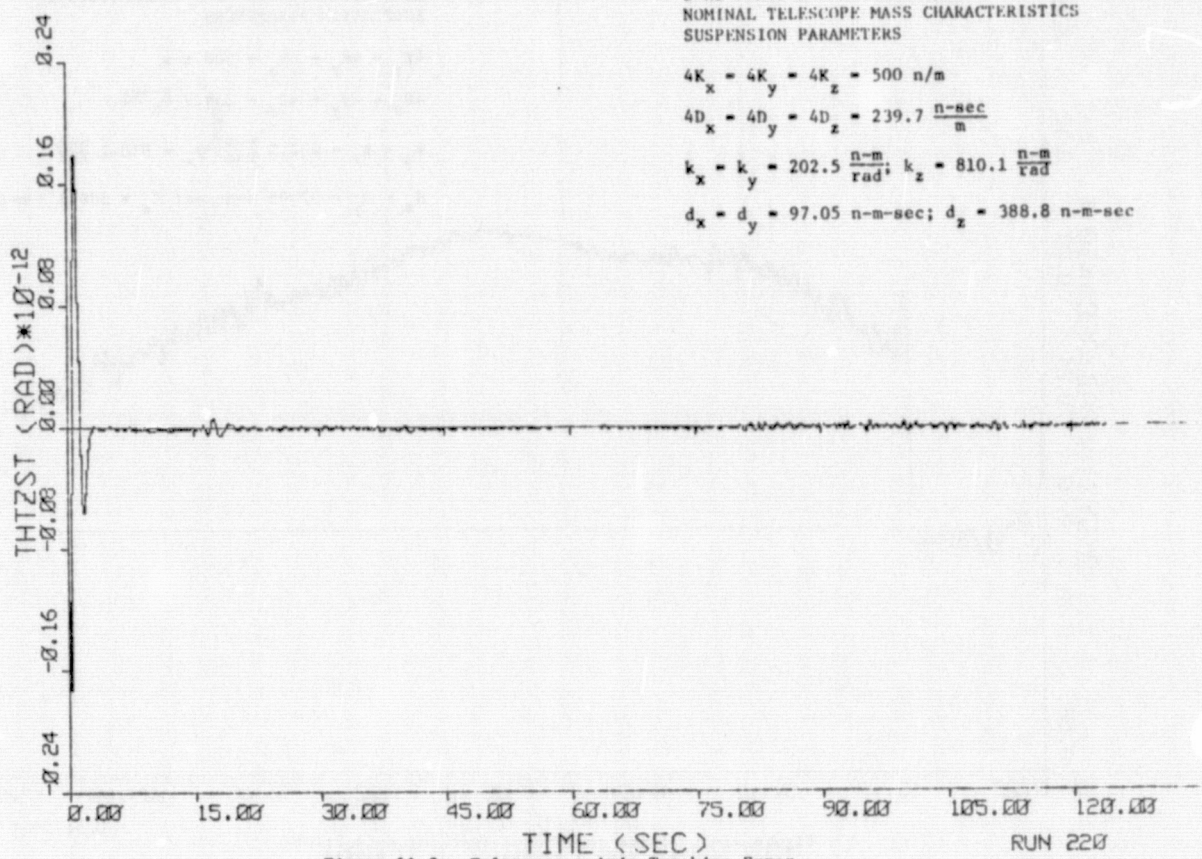


Figure 11-3. Telescope z-Axis Tracking Error

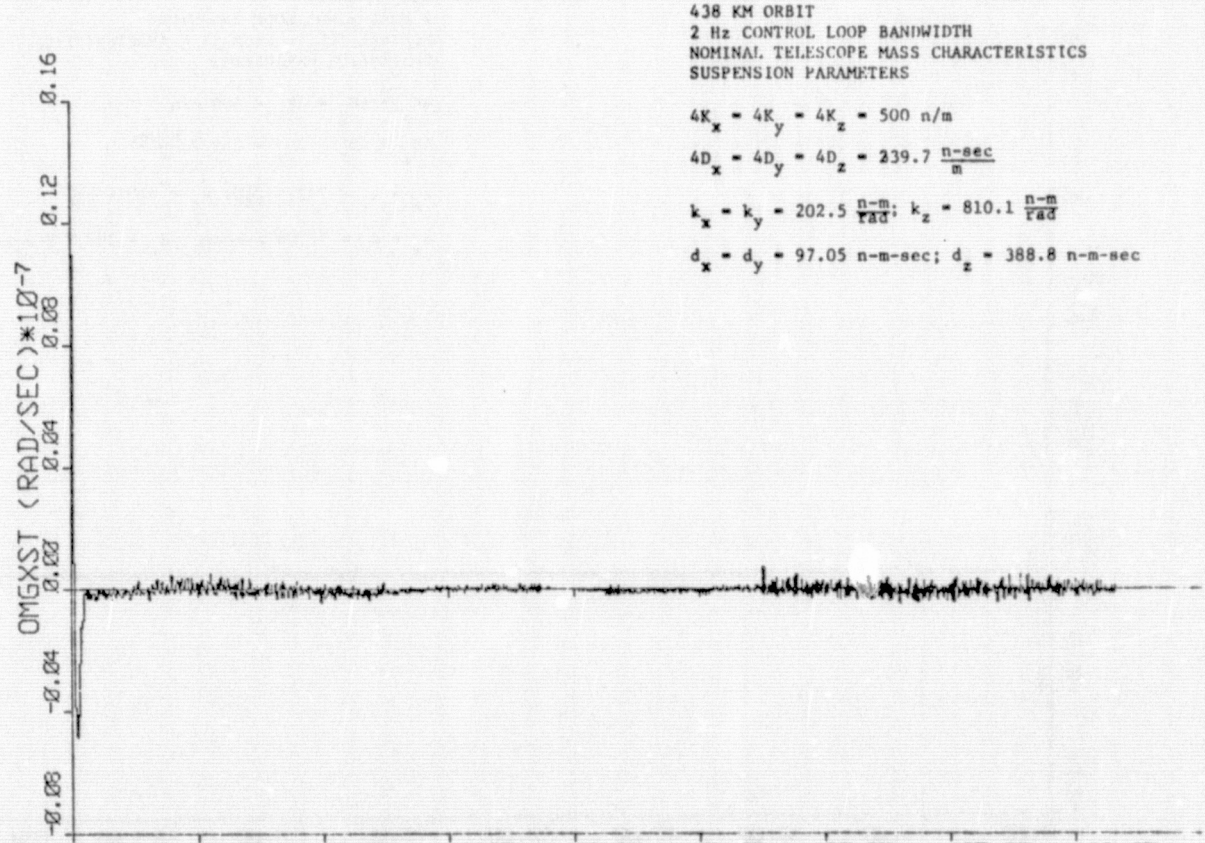


Figure 11-4. Telescope x-Axis Tracking Rate Error

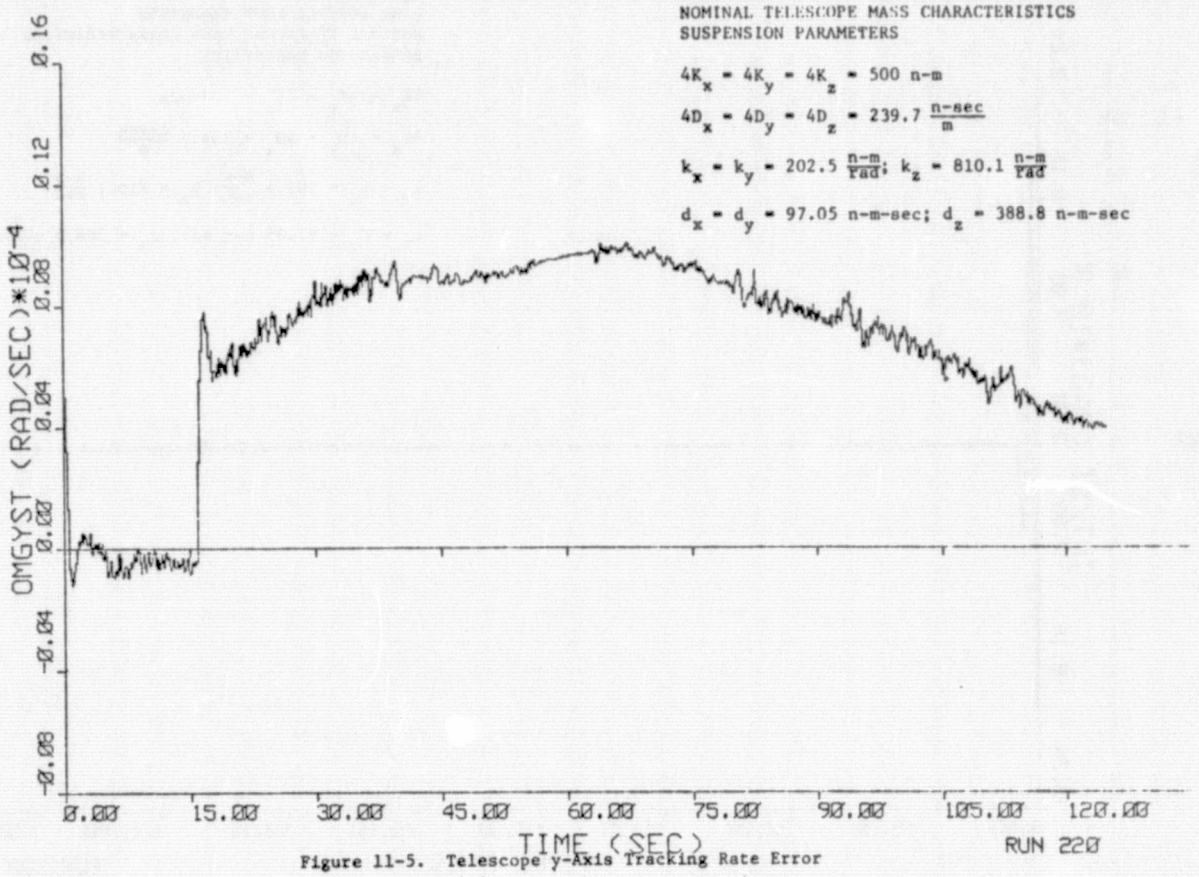


Figure 11-5. Telescope y-Axis Tracking Rate Error

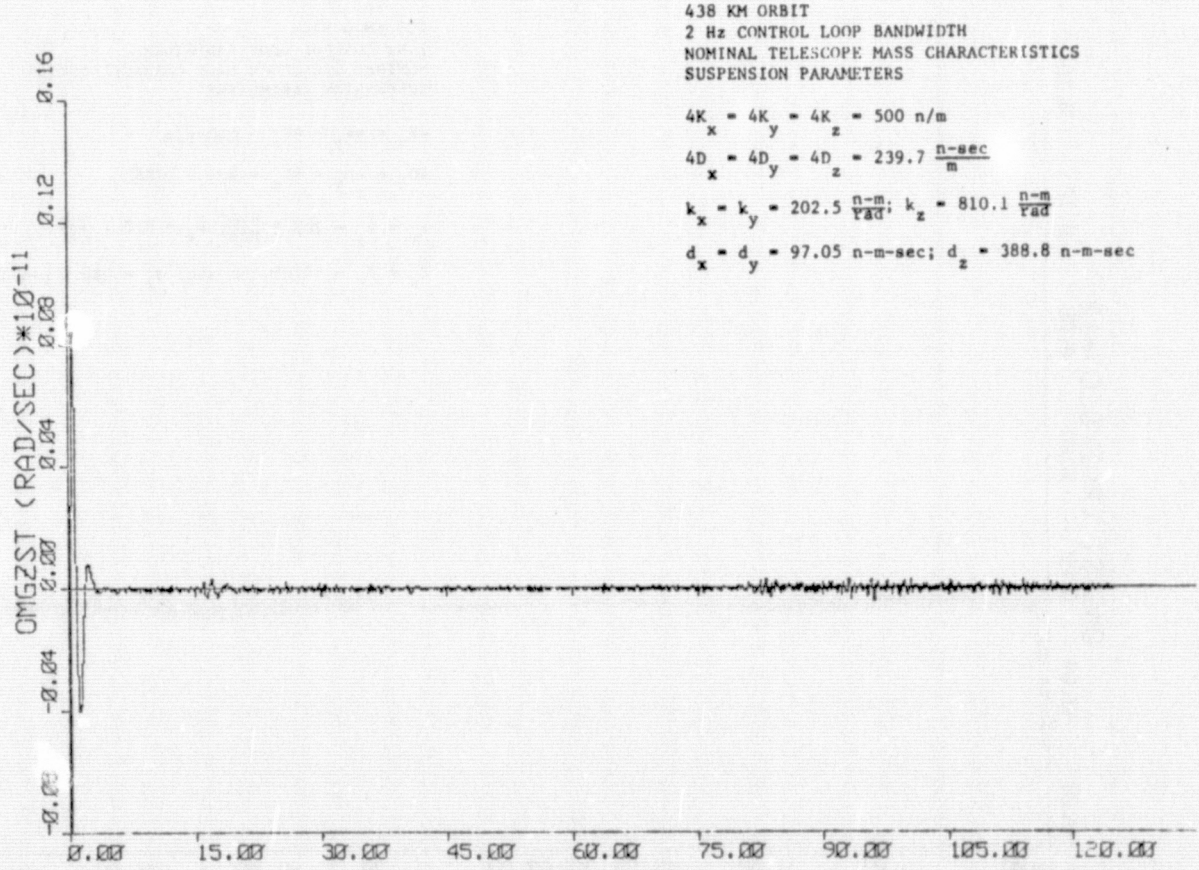


Figure 11-6. Telescope z-Axis Tracking Rate Error

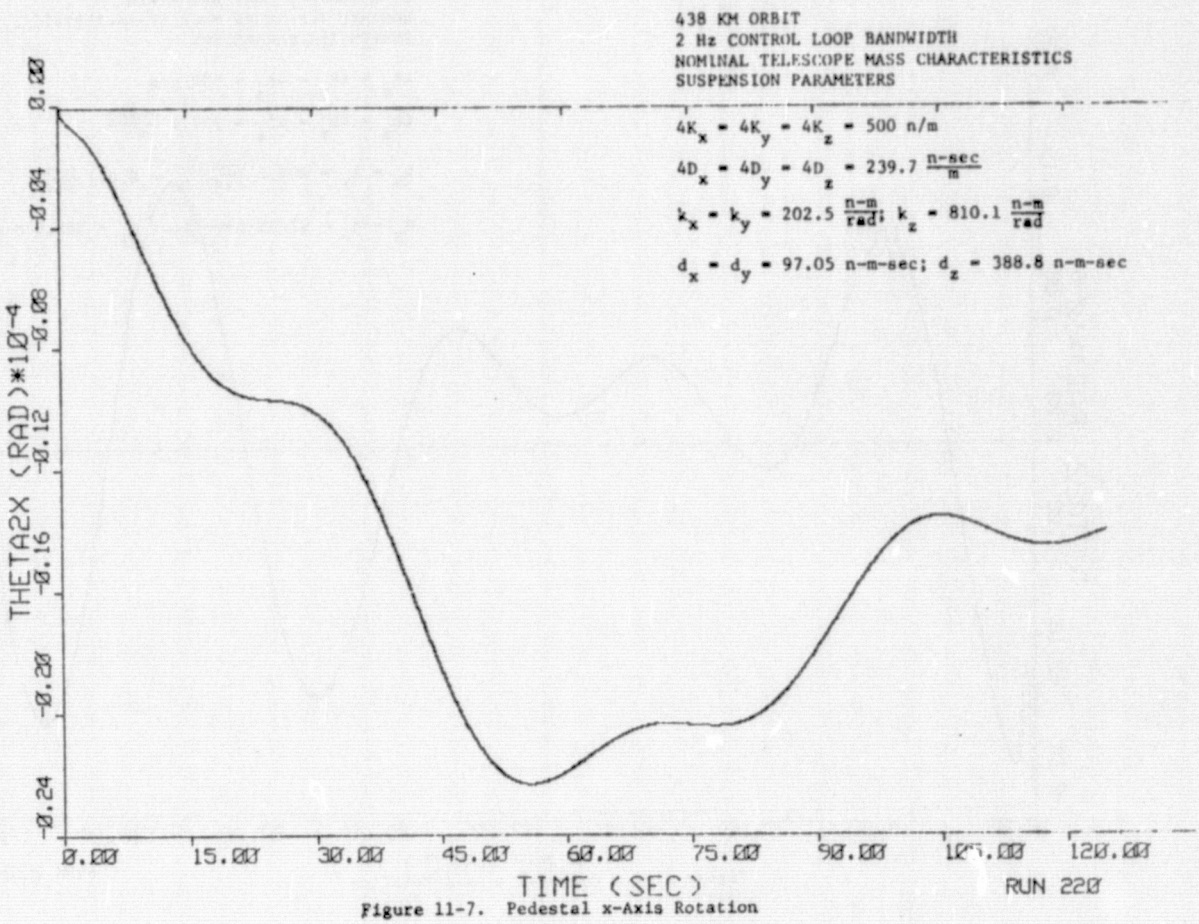


Figure 11-7. Pedestal x-Axis Rotation

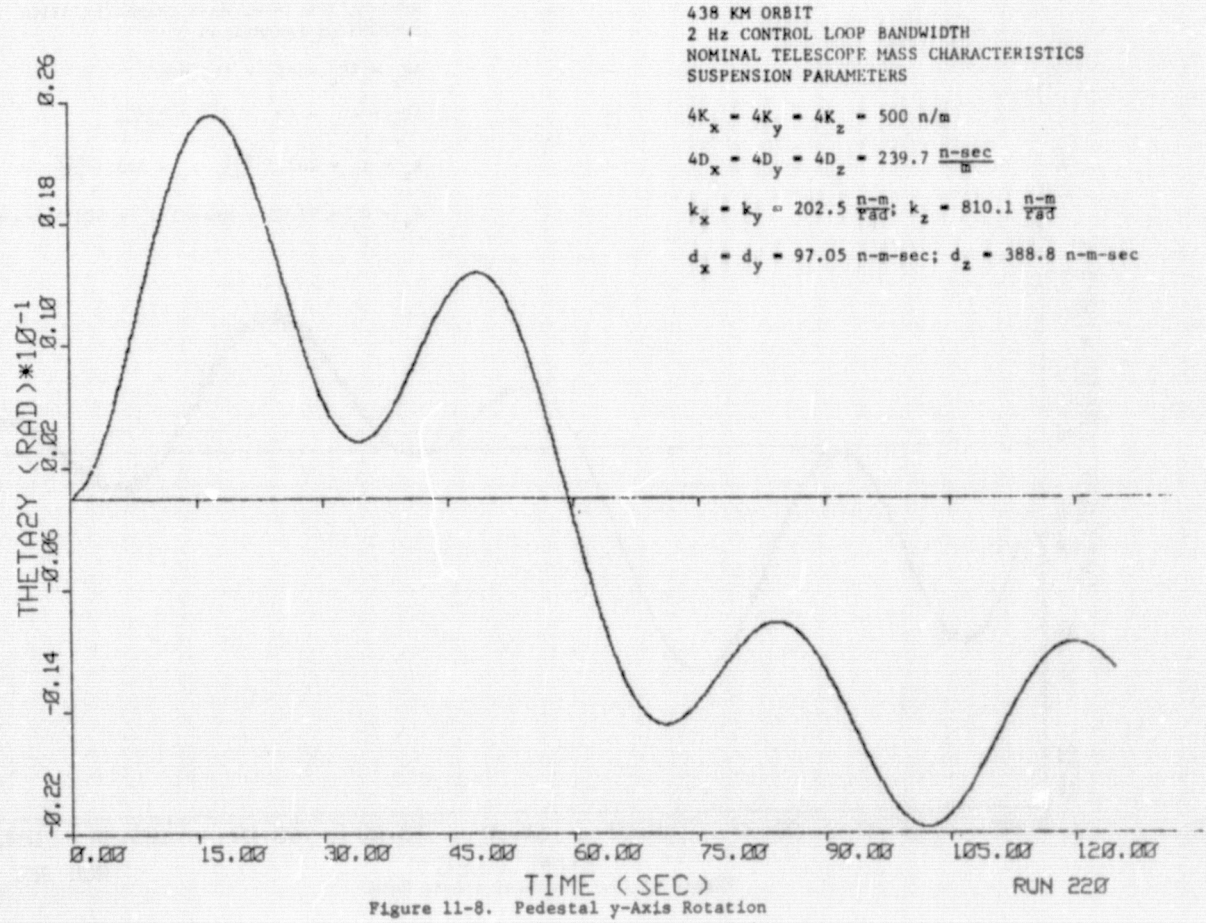


Figure 11-8. Pedestal y-Axis Rotation

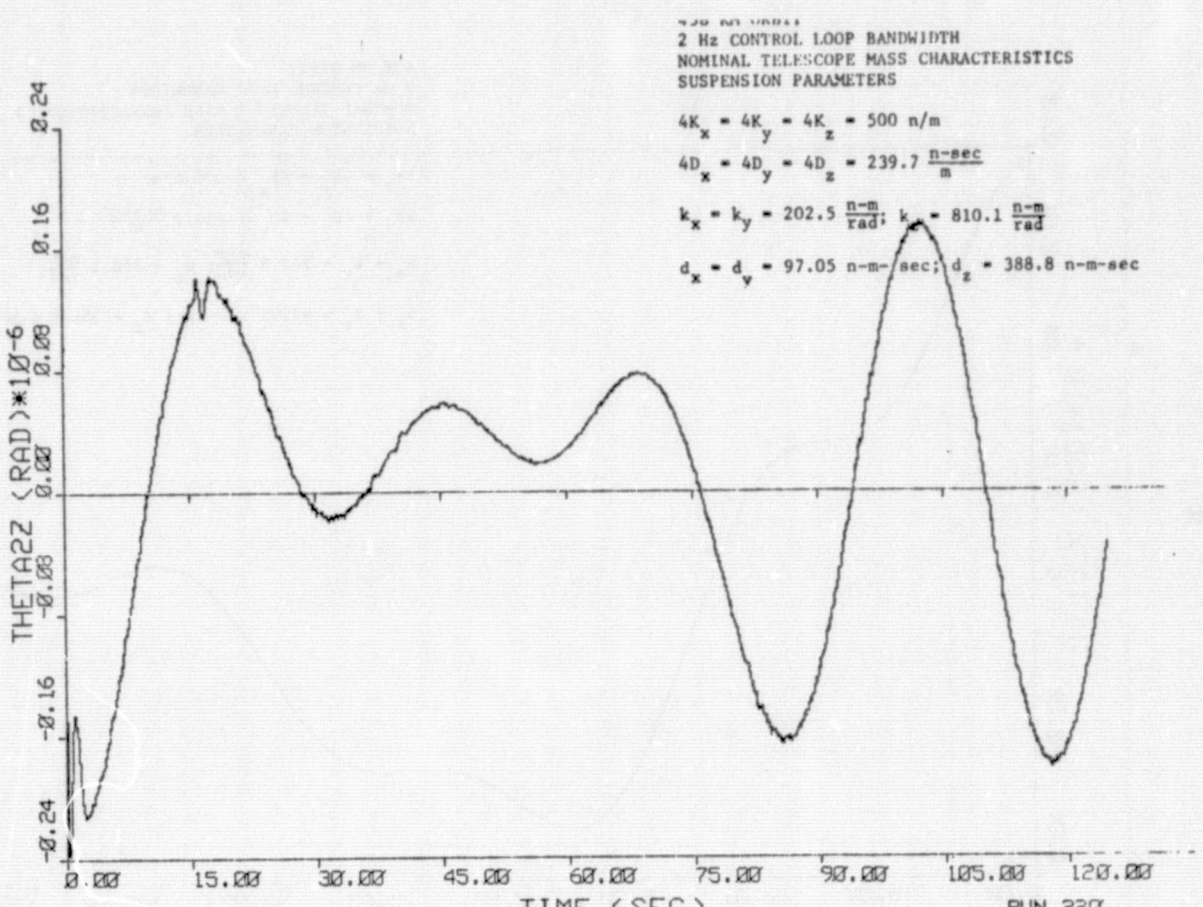


Figure 11-9. Pedestal z-Axis Rotation

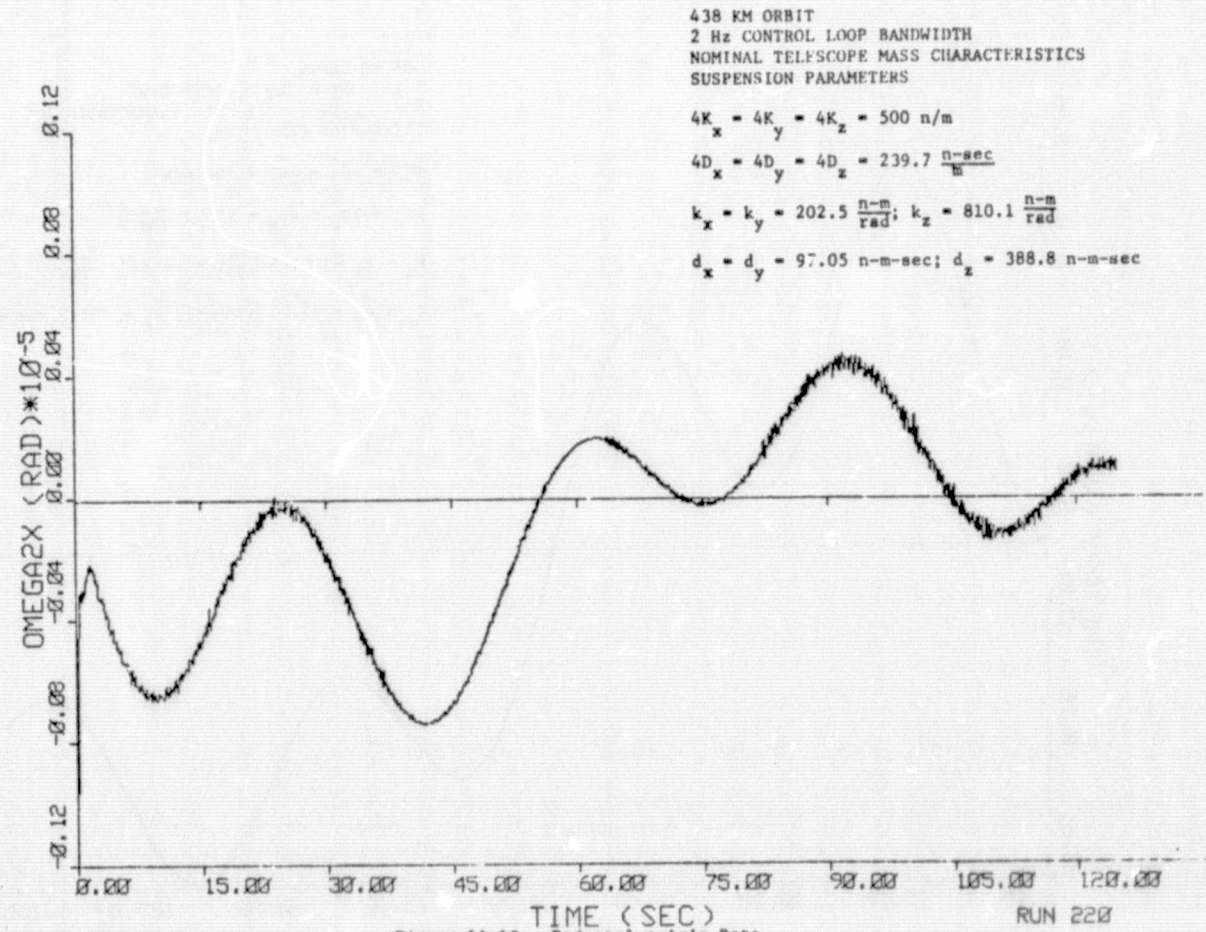


Figure 11-10. Pedestal z-Axis Rate

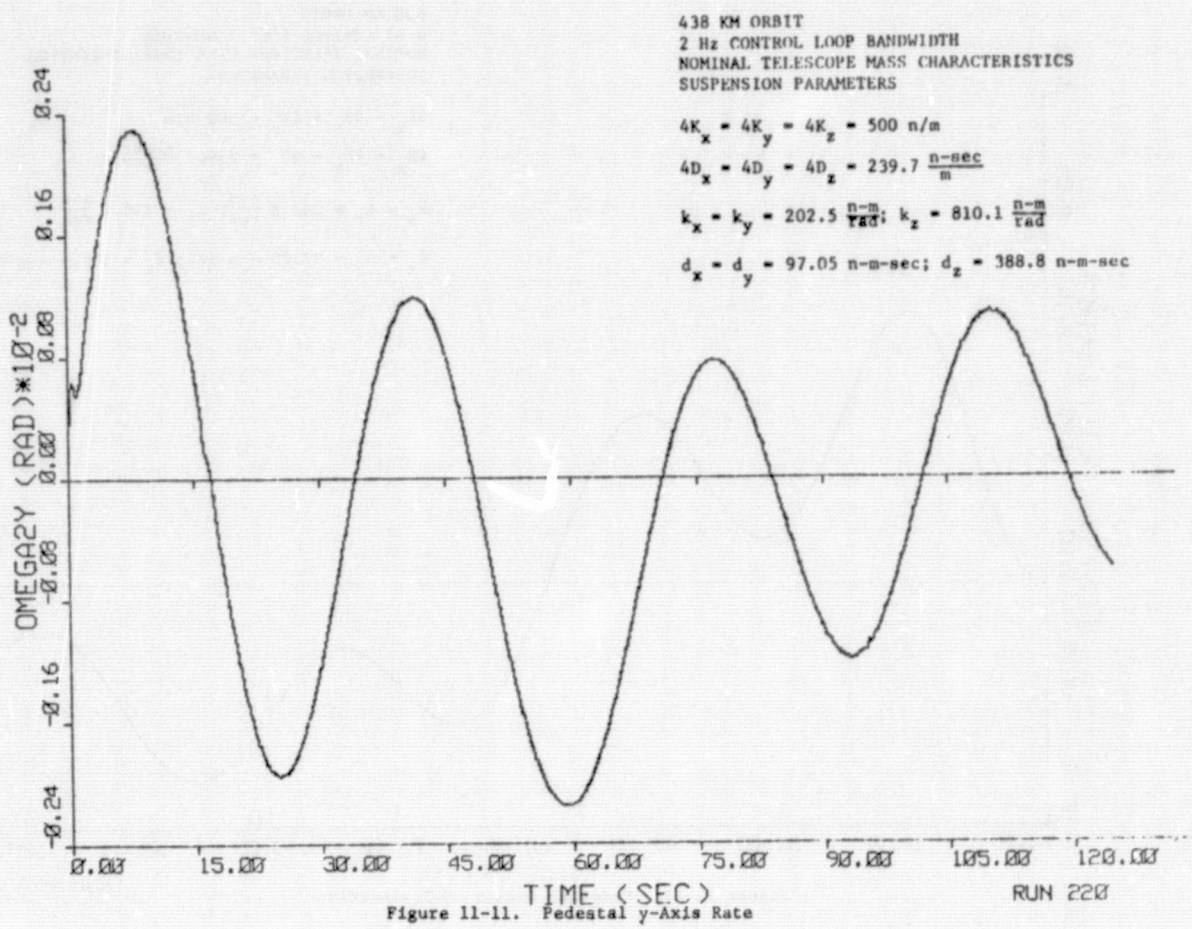


Figure 11-11. Pedestal y-Axis Rate

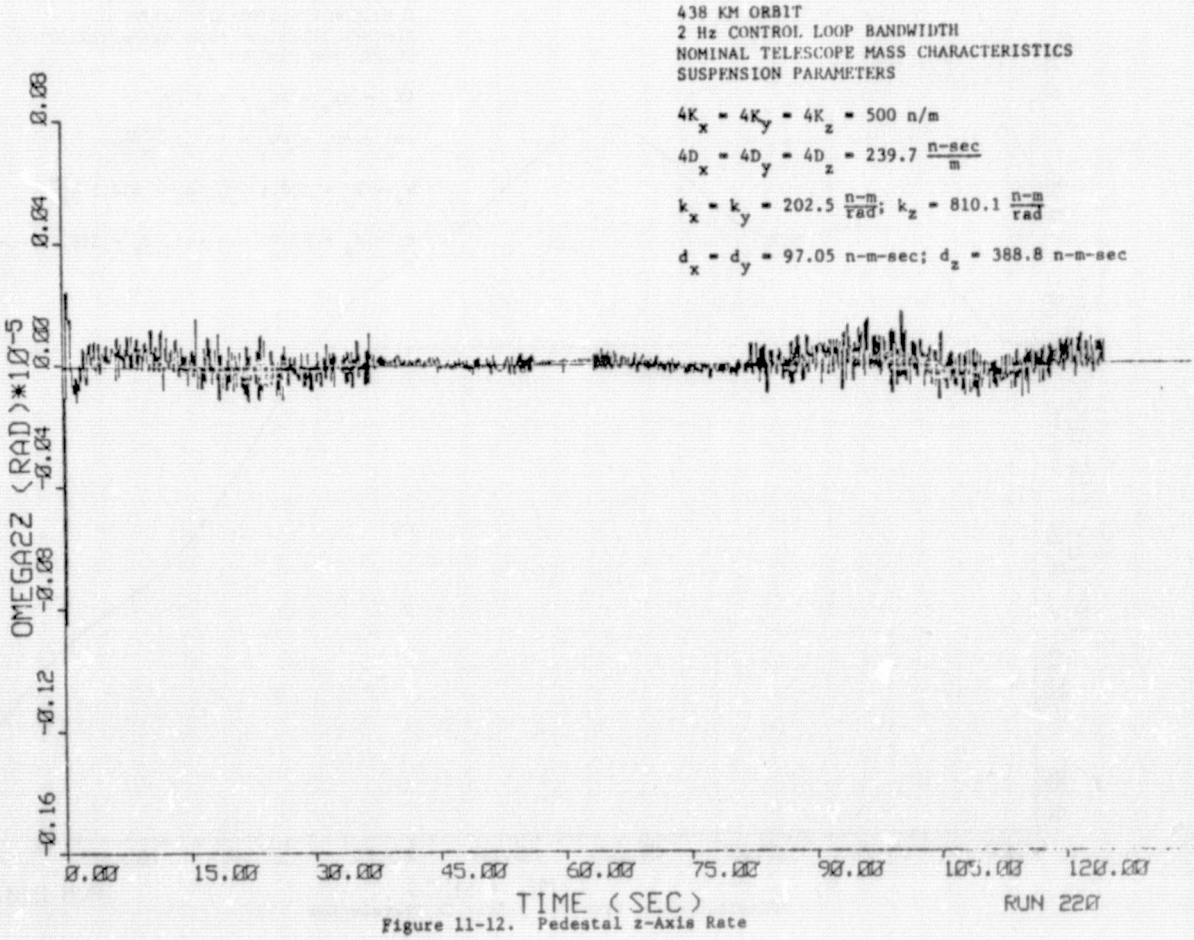


Figure 11-12. Pedestal z-Axis Rate

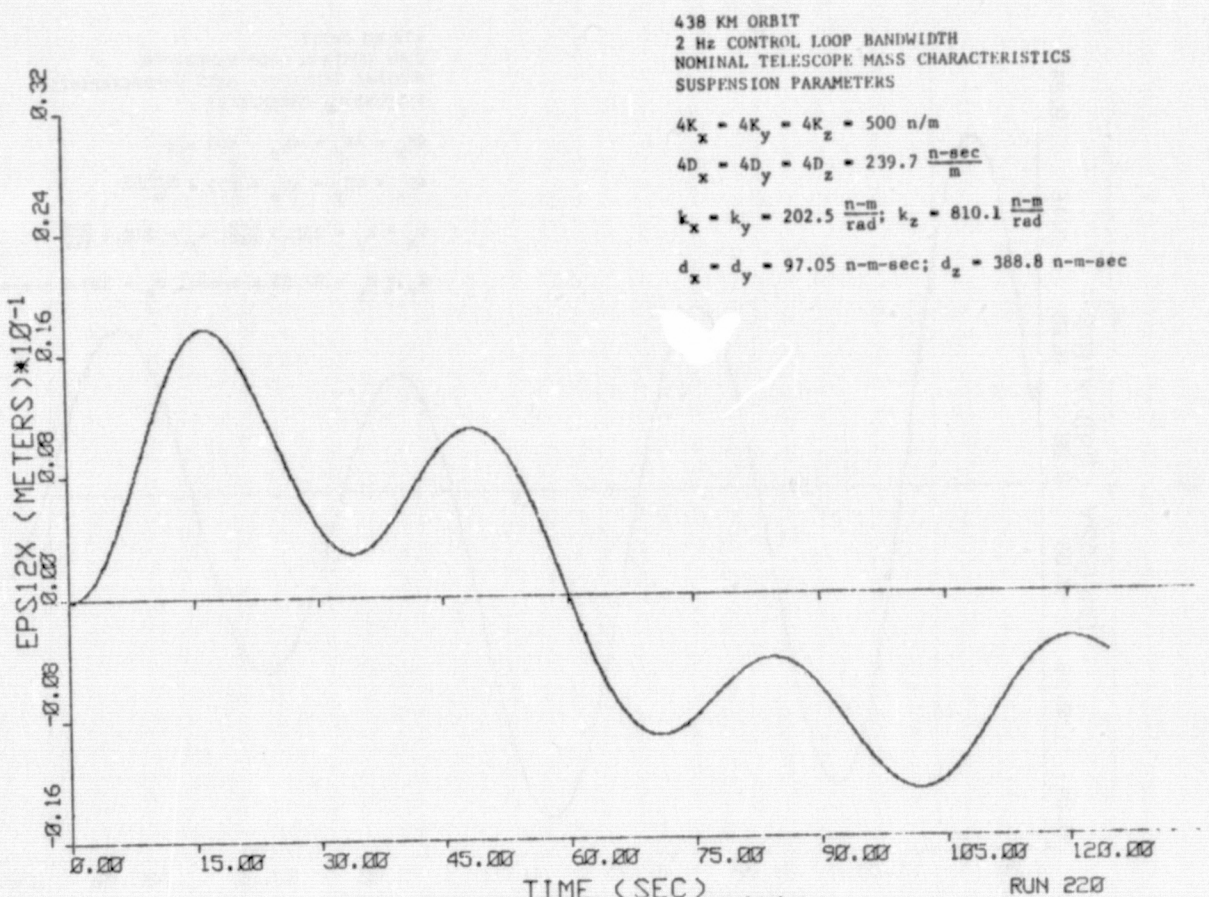


Figure 11-13. Pedestal x-Axis CM Translation

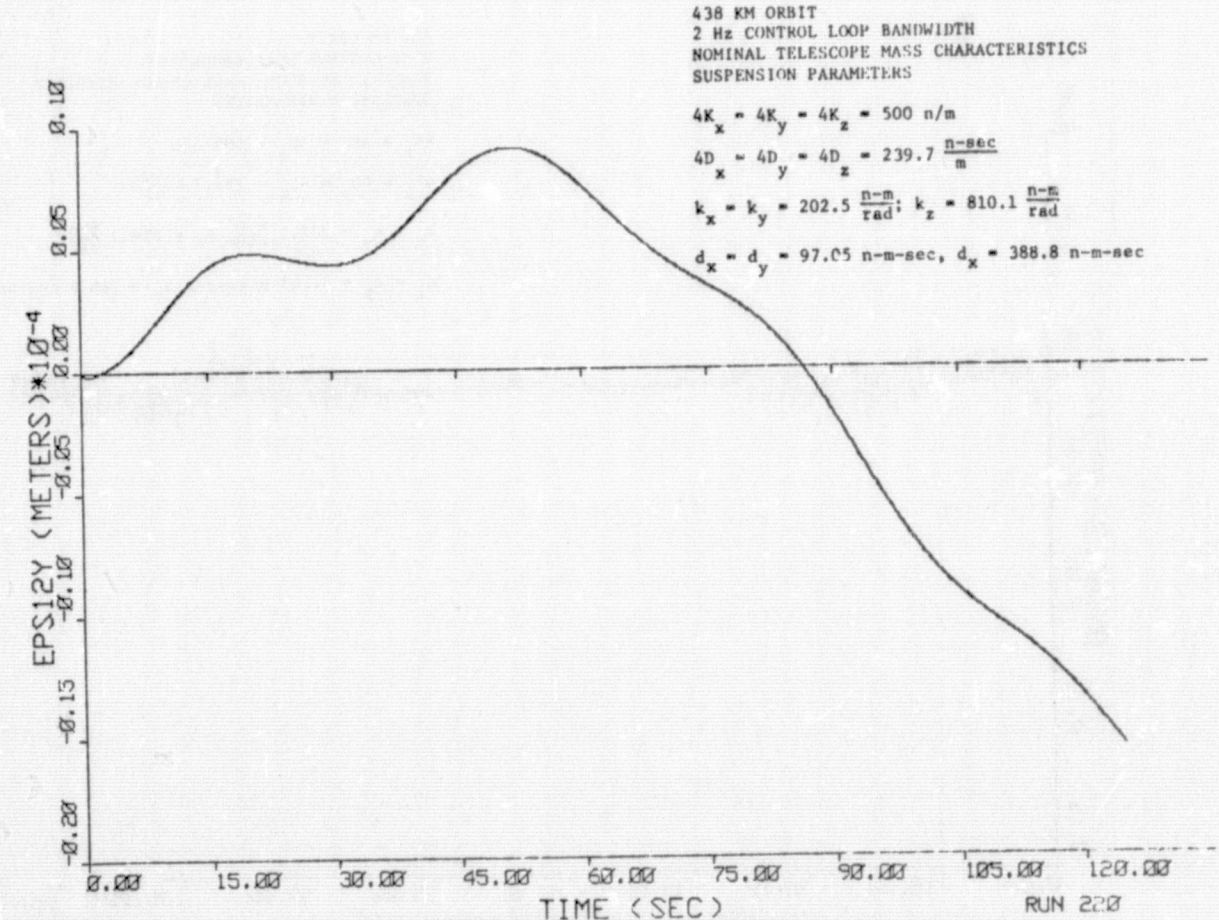


Figure 11-14. Pedestal y-Axis CM Translation

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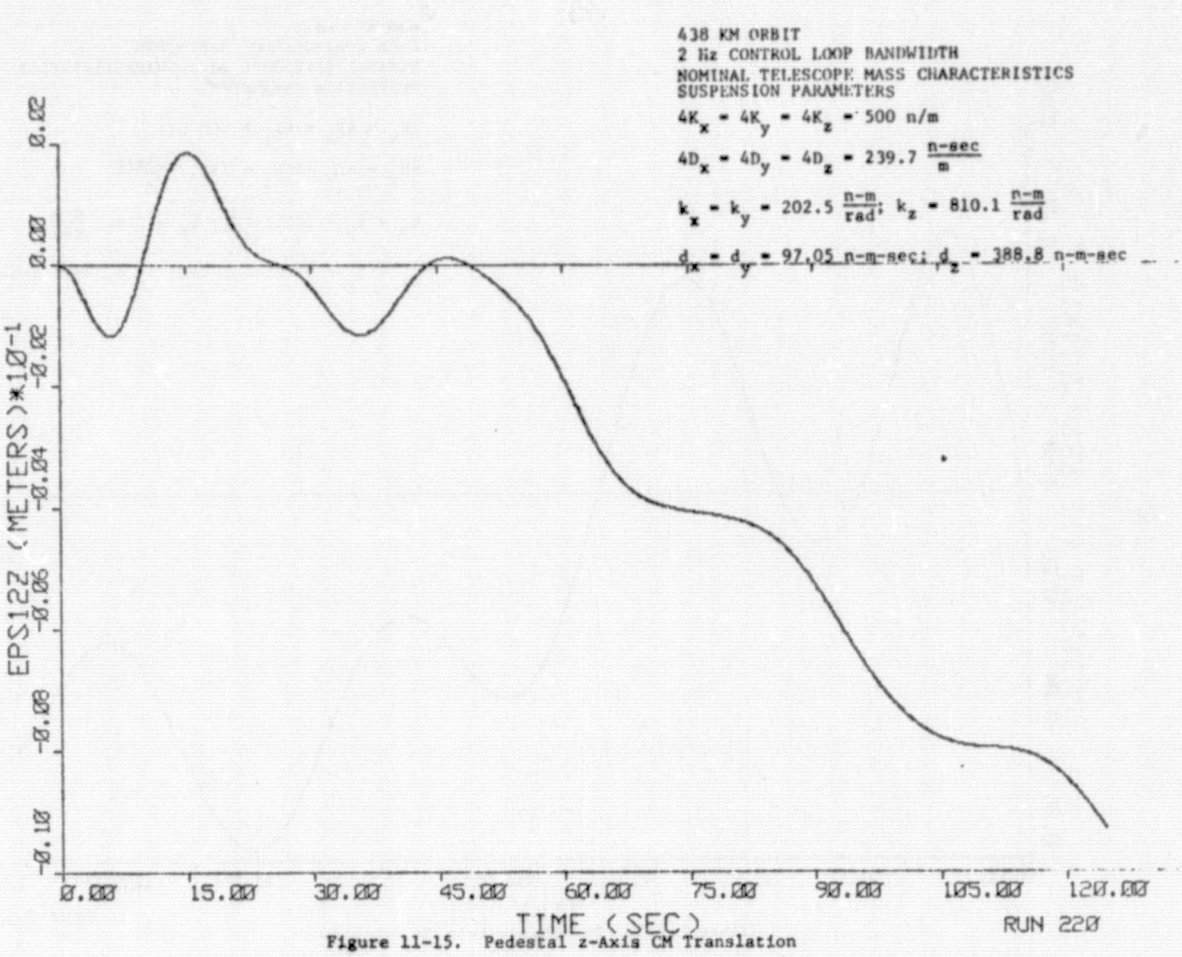


Figure 11-15. Pedestal z-Axis CM Translation

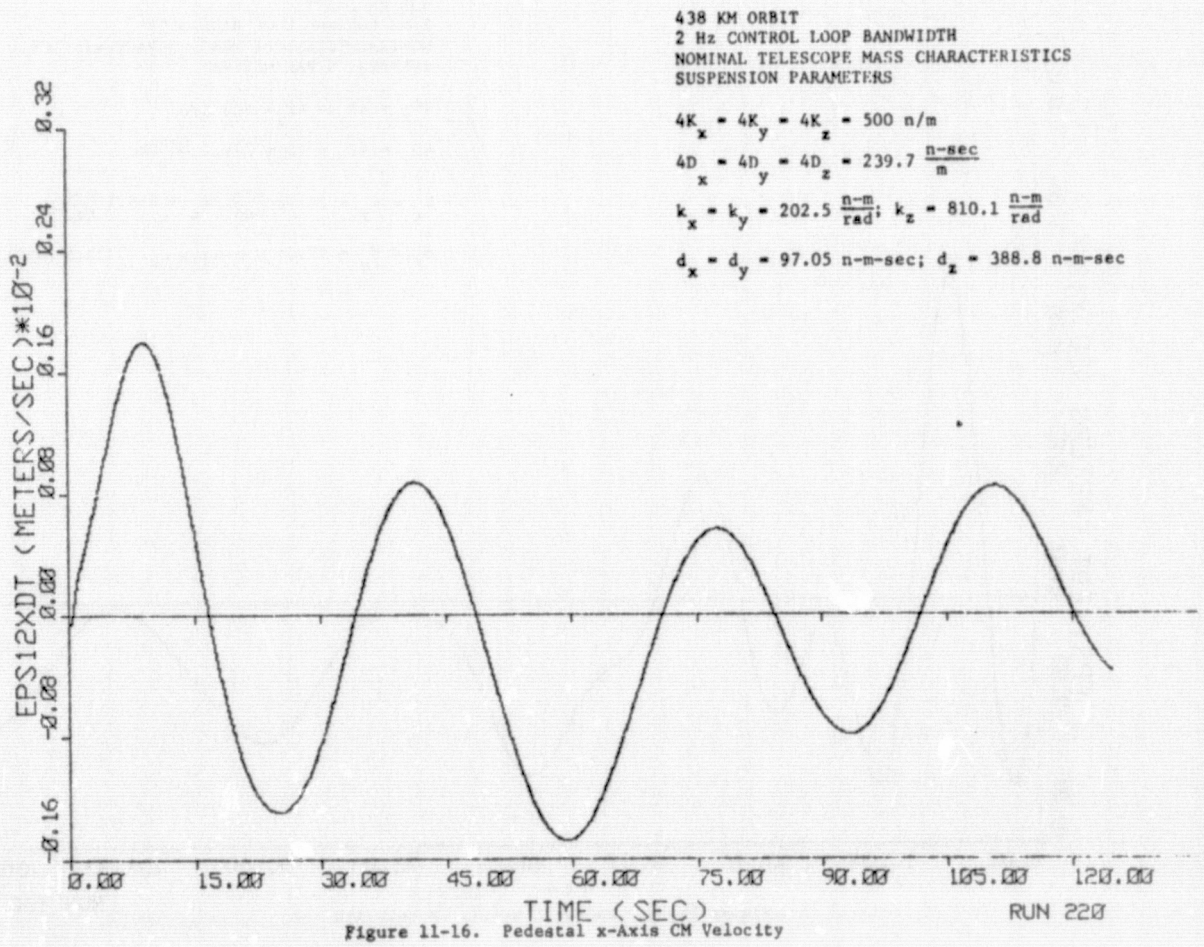


Figure 11-16. Pedestal x-Axis CM Velocity

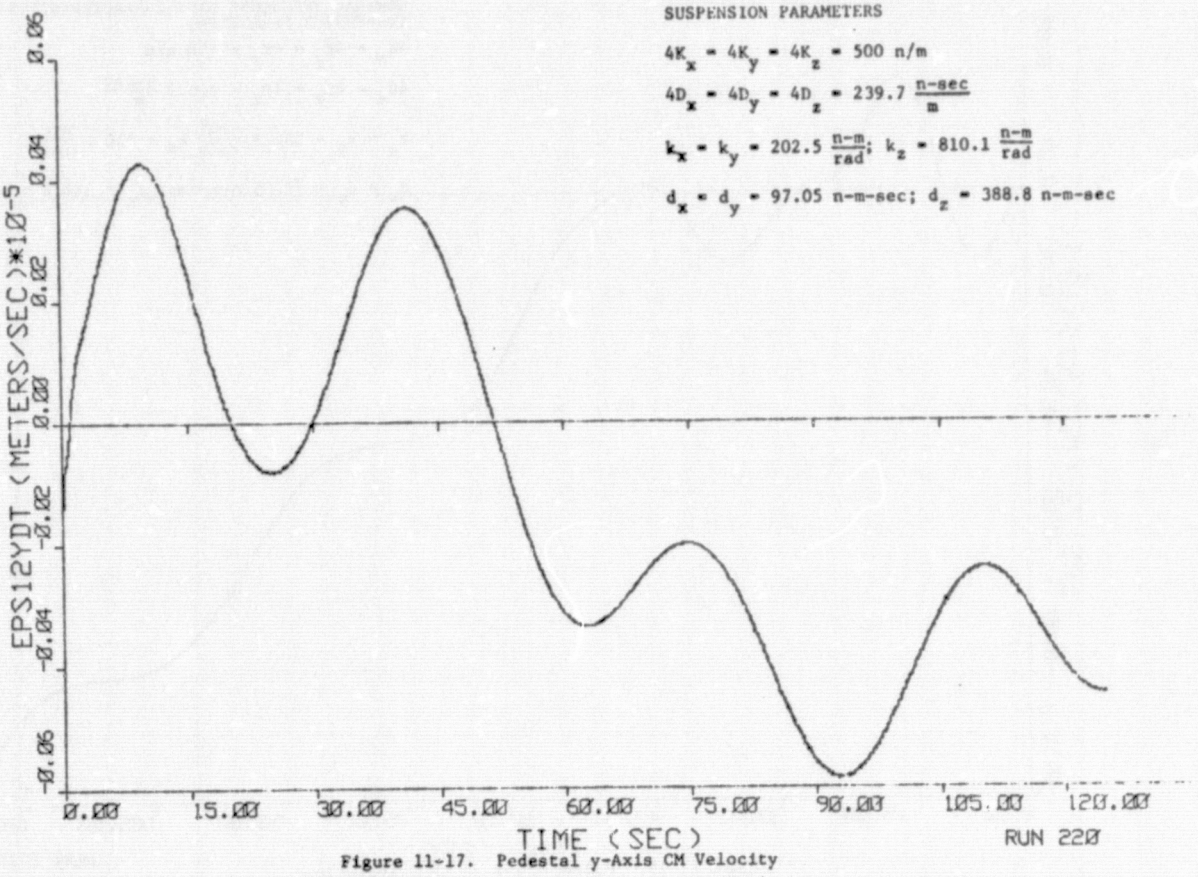


Figure 11-17. Pedestal y-Axis CM Velocity

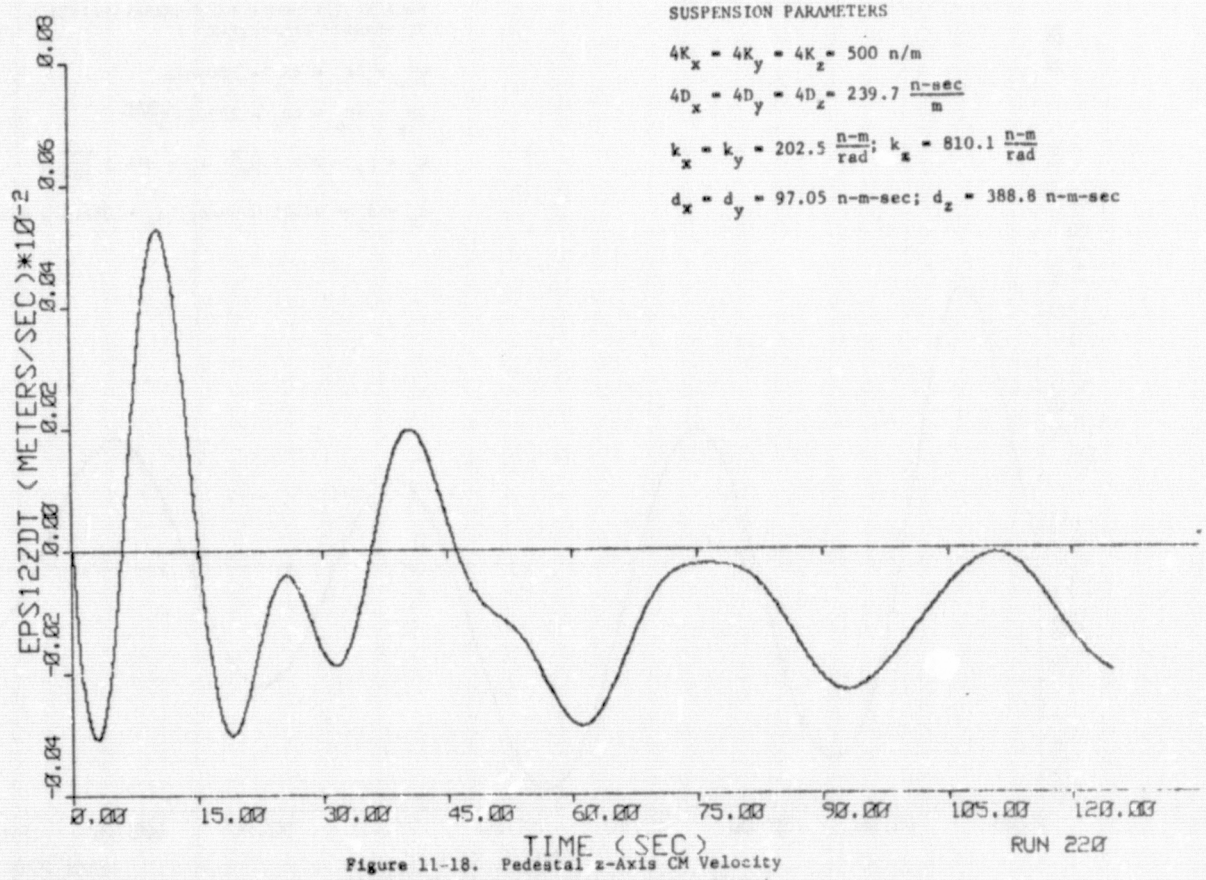


Figure 11-18. Pedestal z-Axis CM Velocity

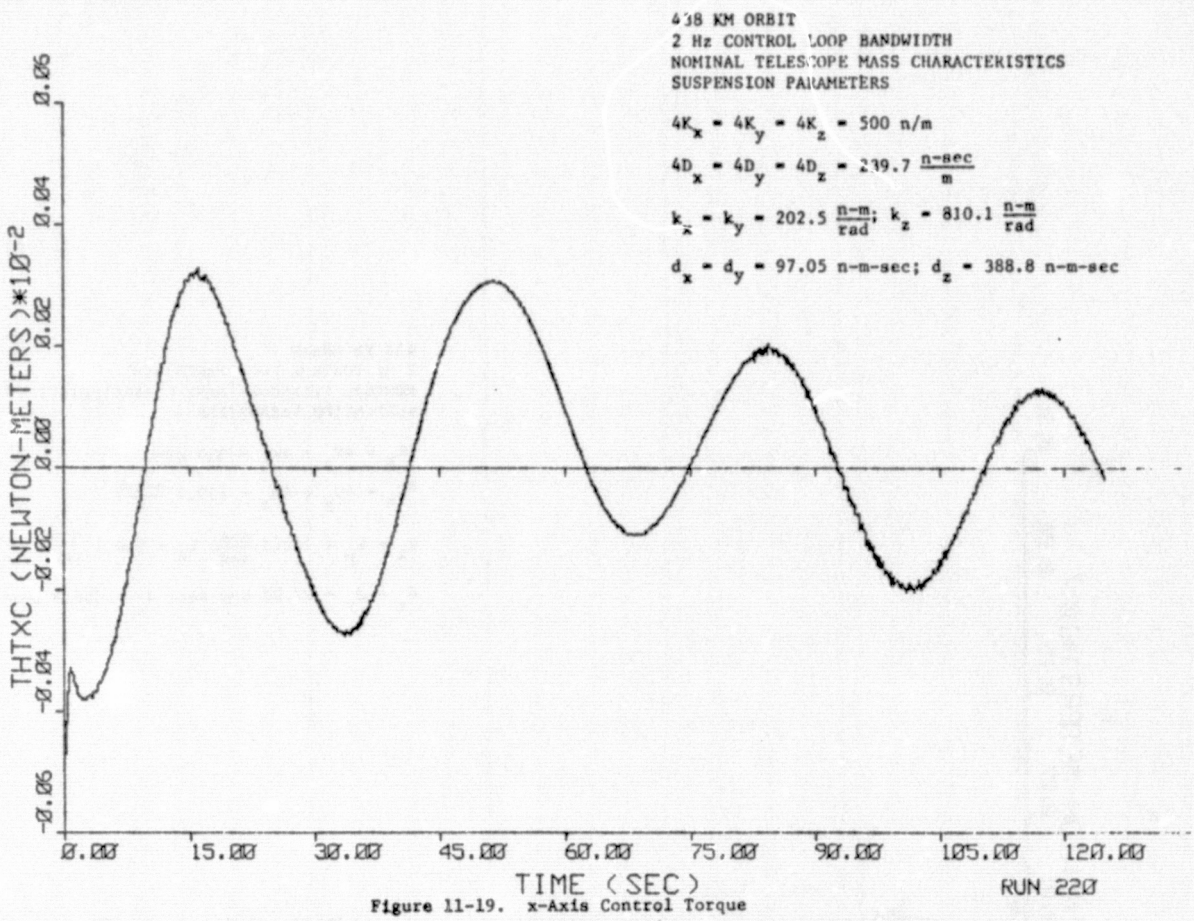


Figure 11-19. x-Axis Control Torque

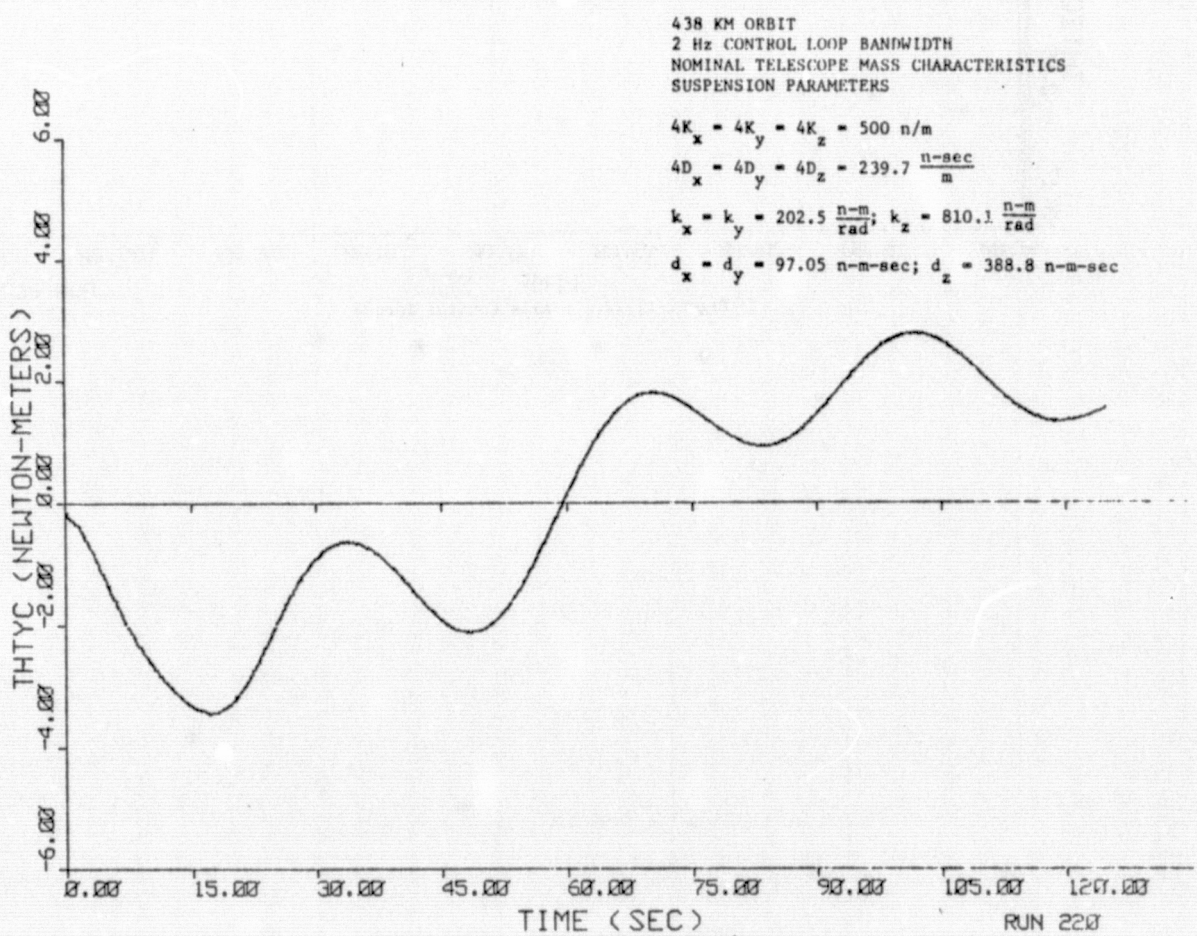


Figure 11-20. y-Axis Control Torque

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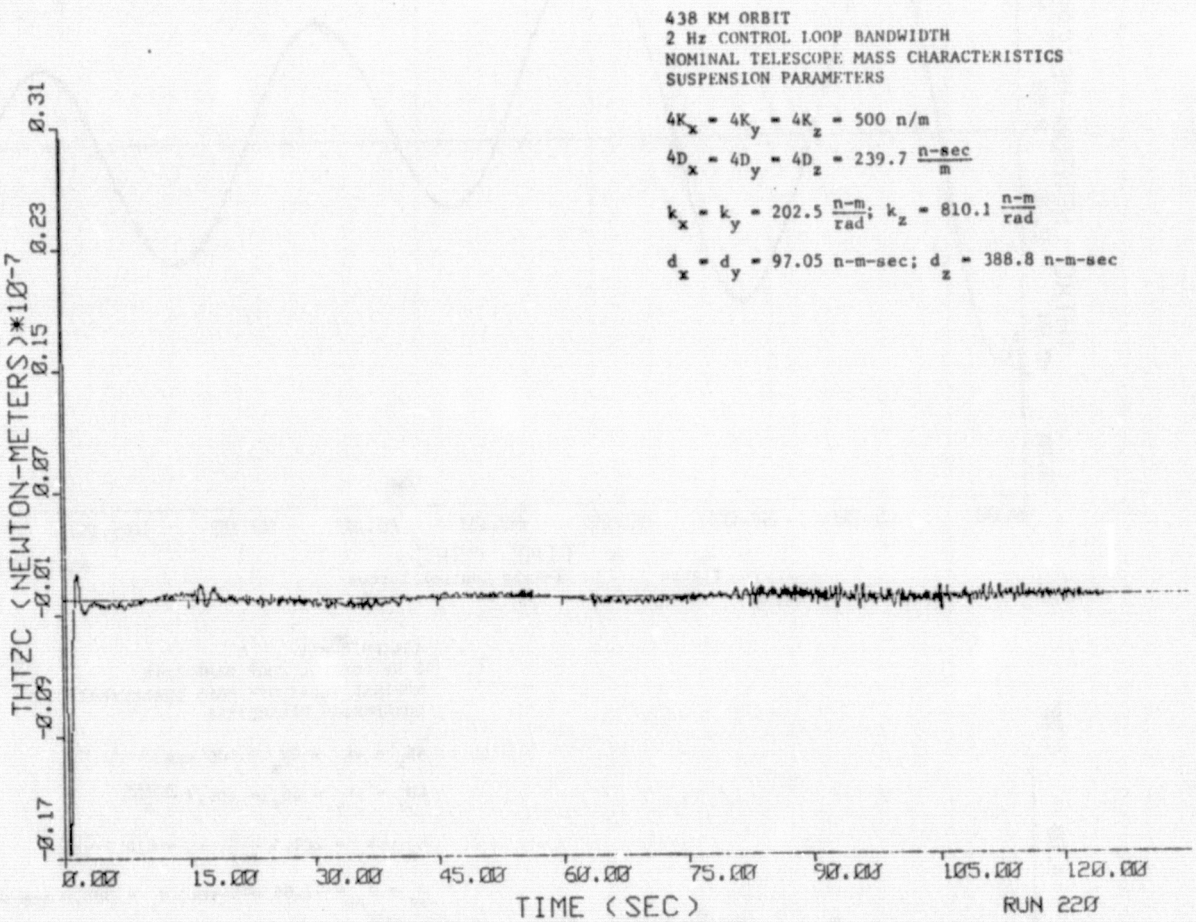


Figure 11-21. z-Axis Control Torque

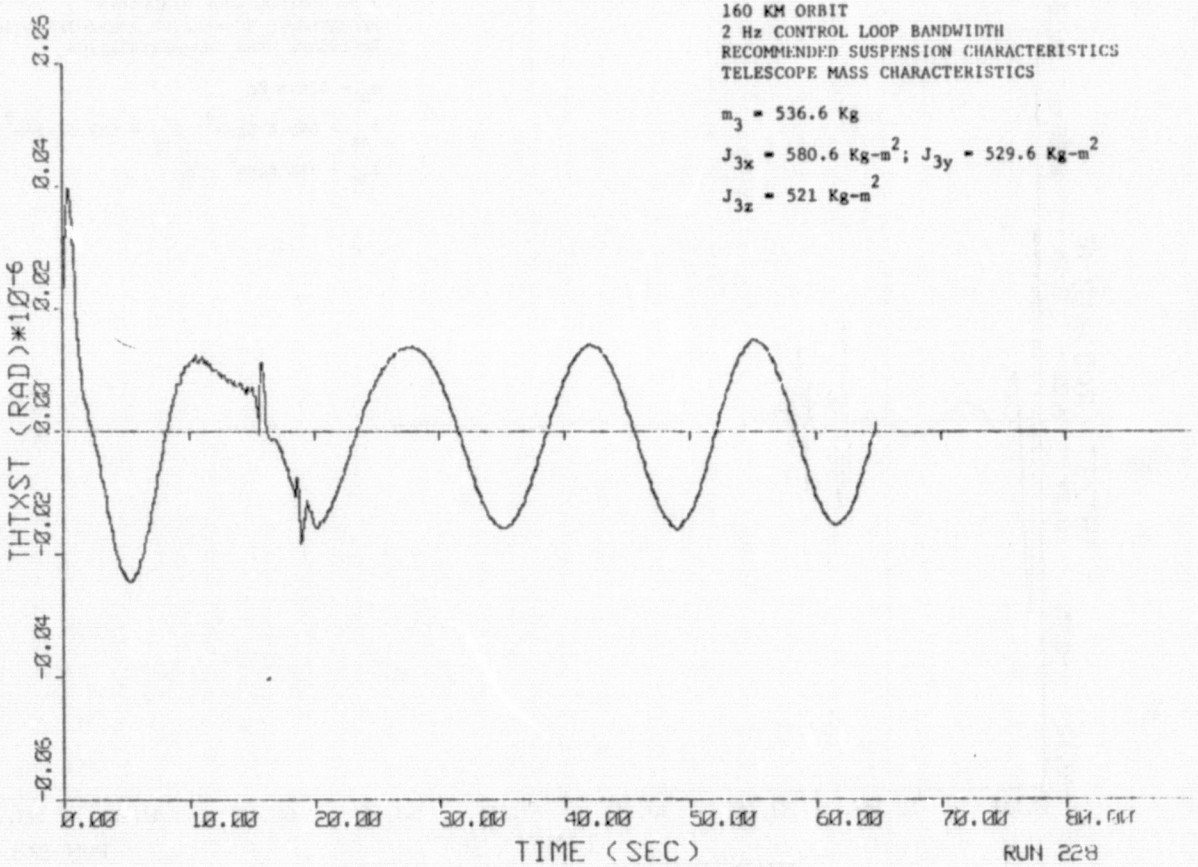


Figure 11-22. Telescope x-Axis Tracking Error

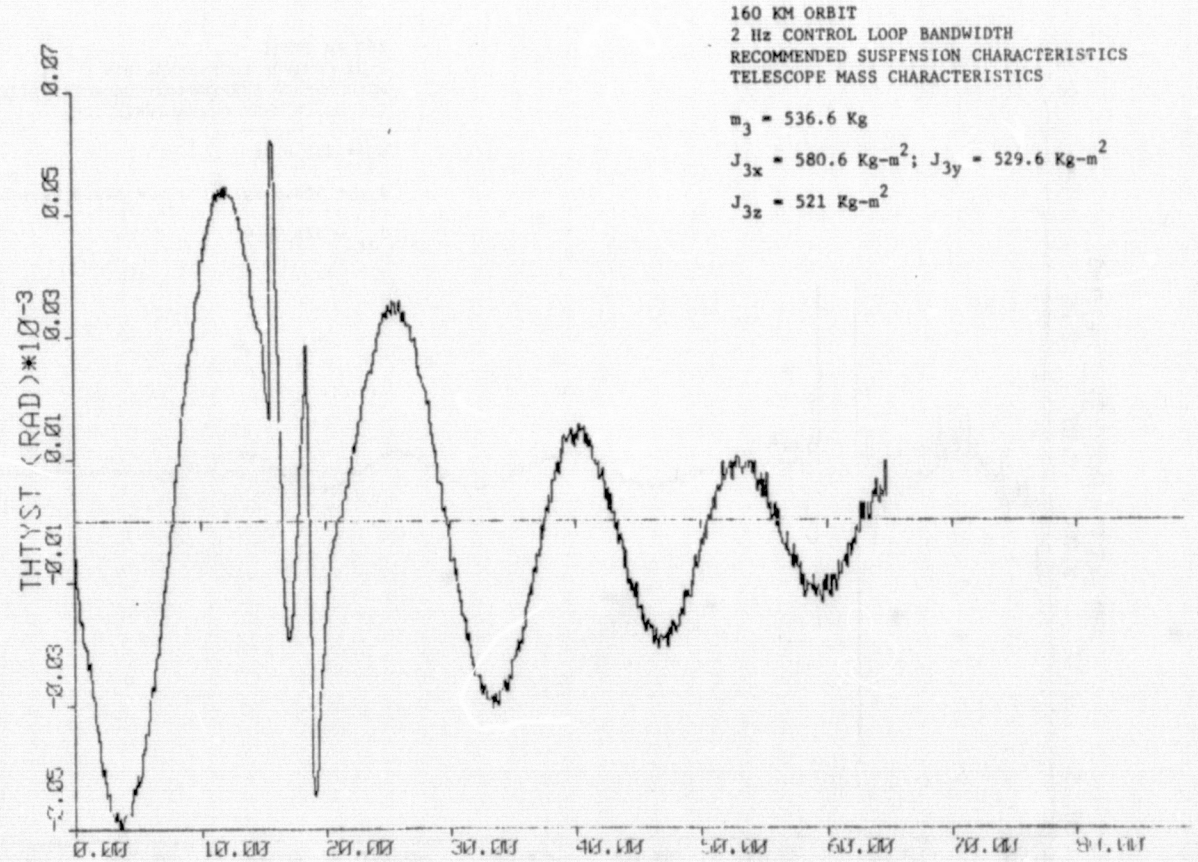


Figure 11-23. Telescope y-Axis Tracking Error

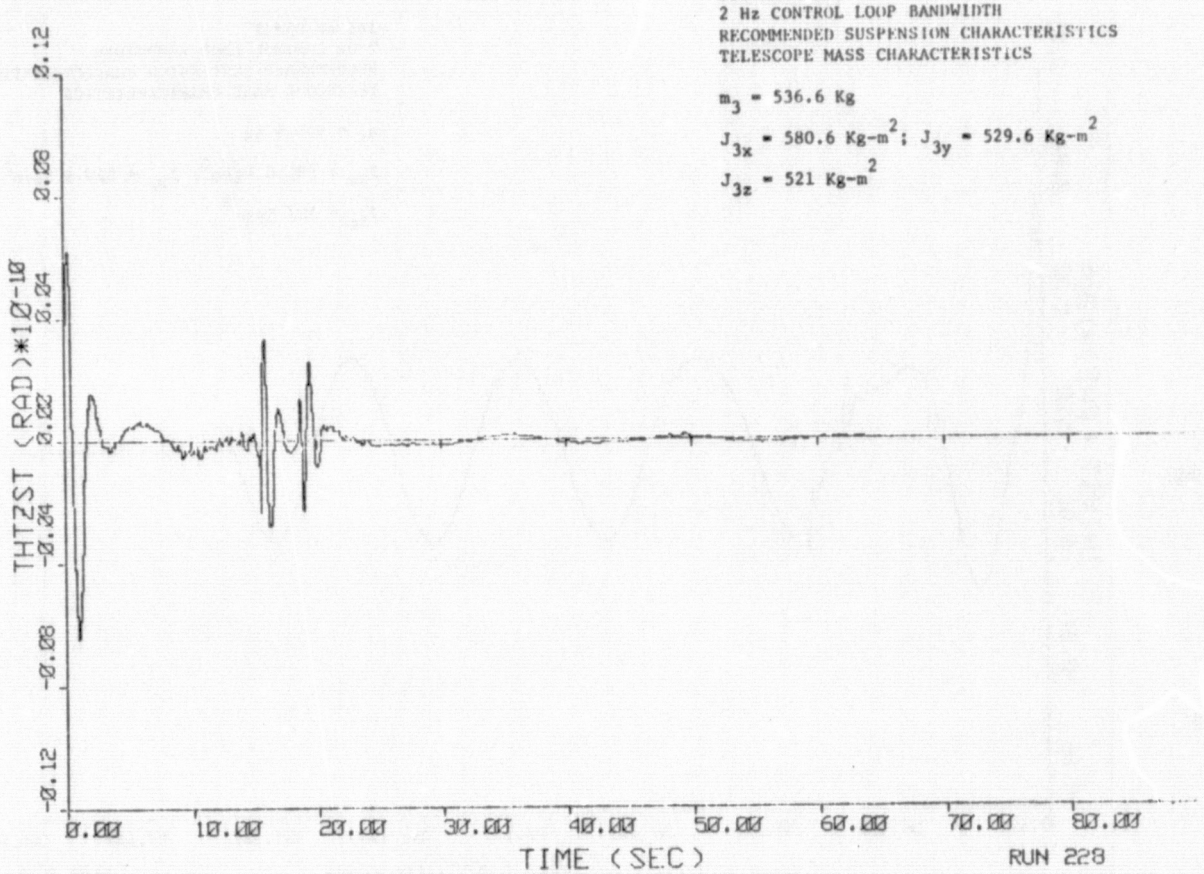


Figure 11-24. Telescope z-Axis Tracking Error

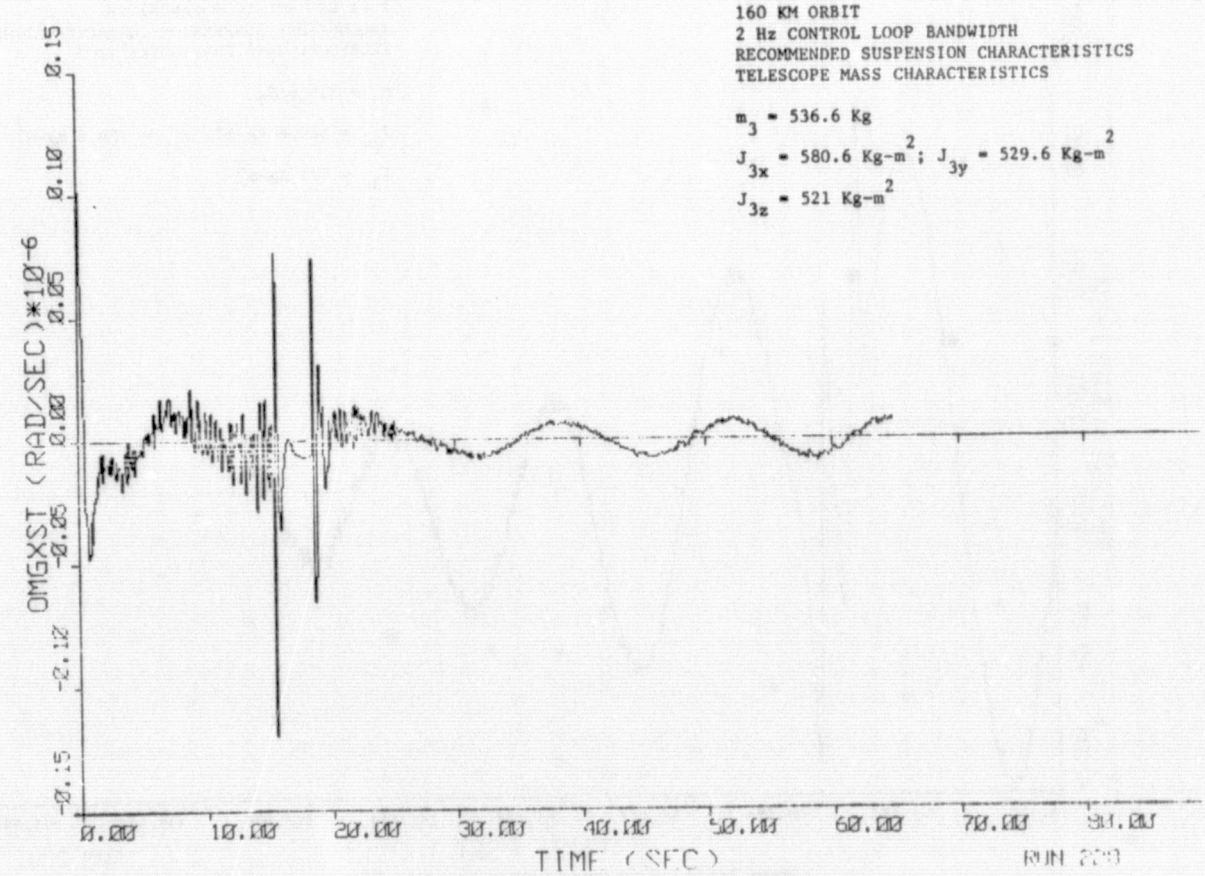


Figure 11-25. Telescope x-Axis Rate Error

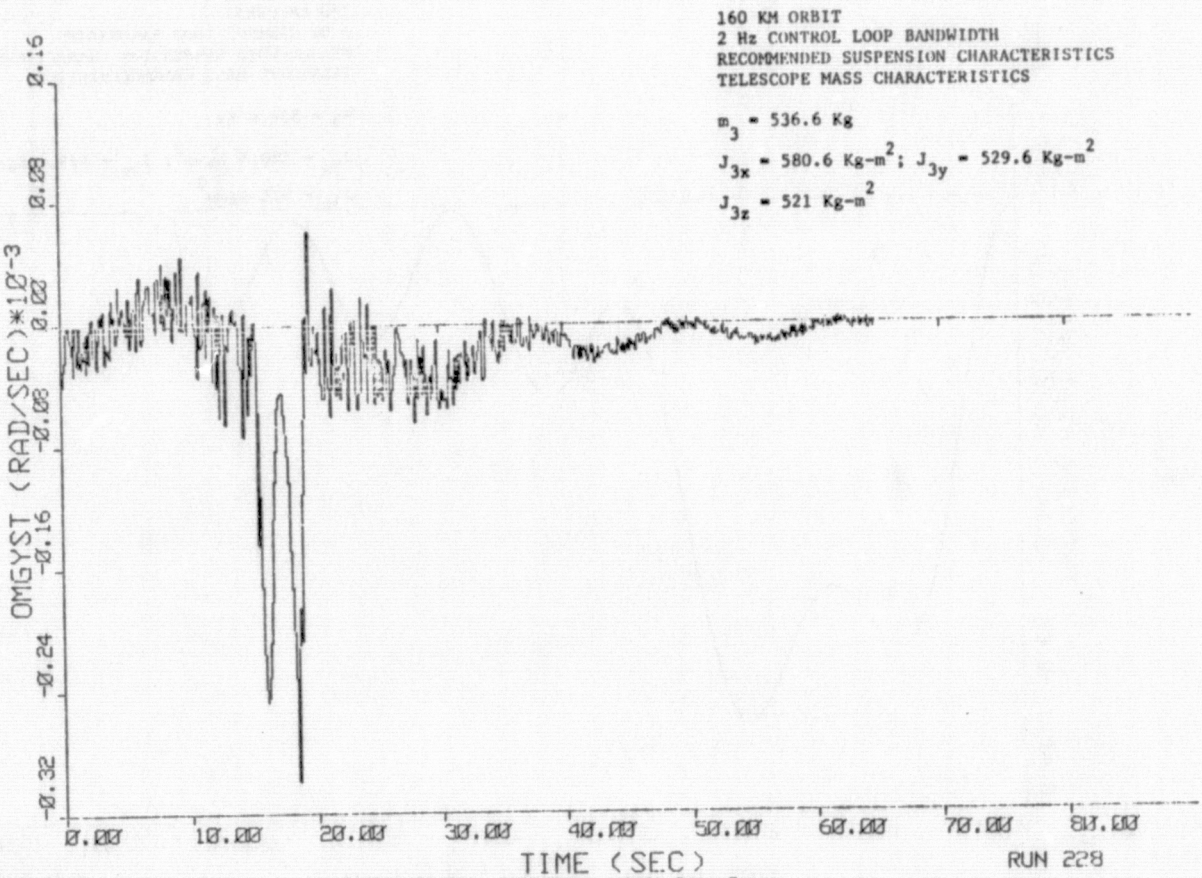


Figure 11-26. Telescope y-Axis Rate Error

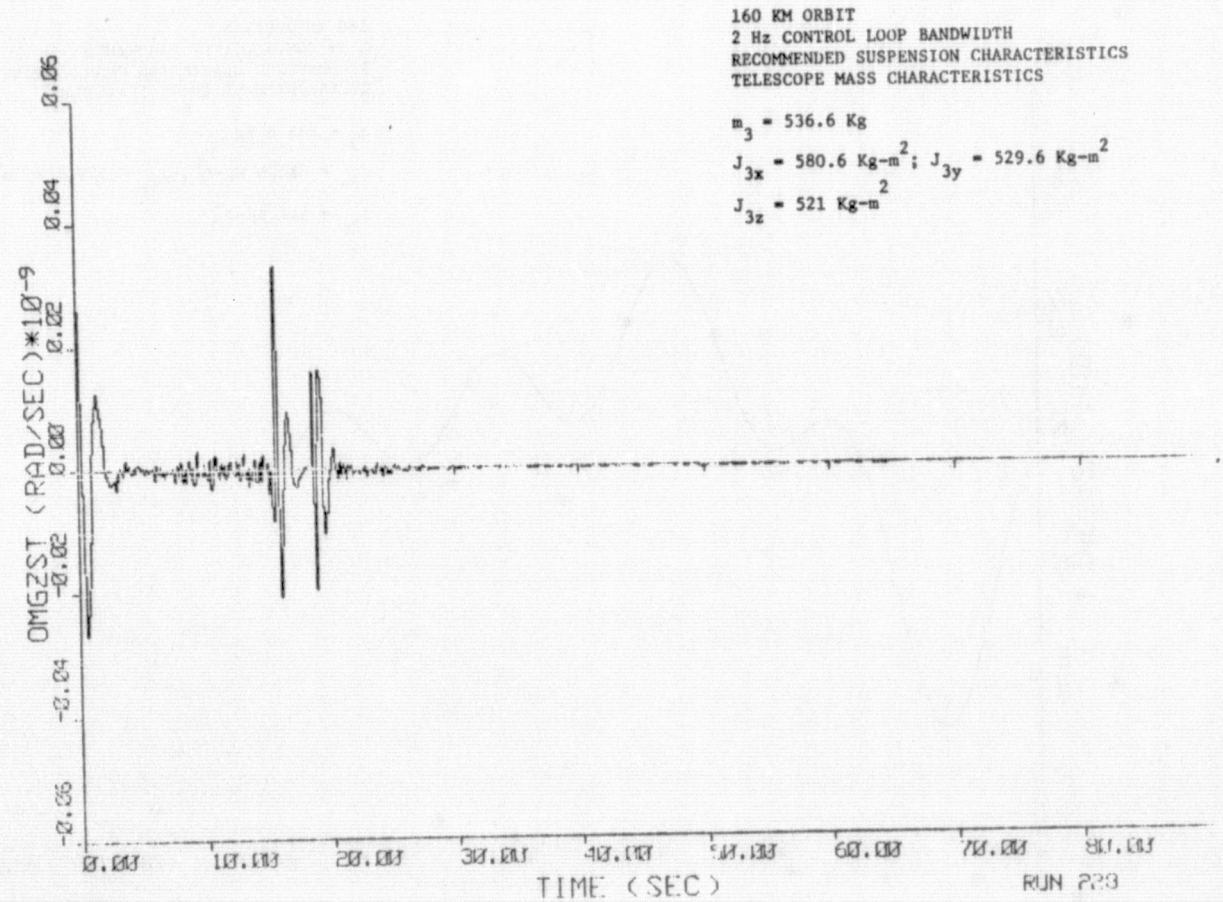


Figure 11-27. Telescope z-Axis Rate Error

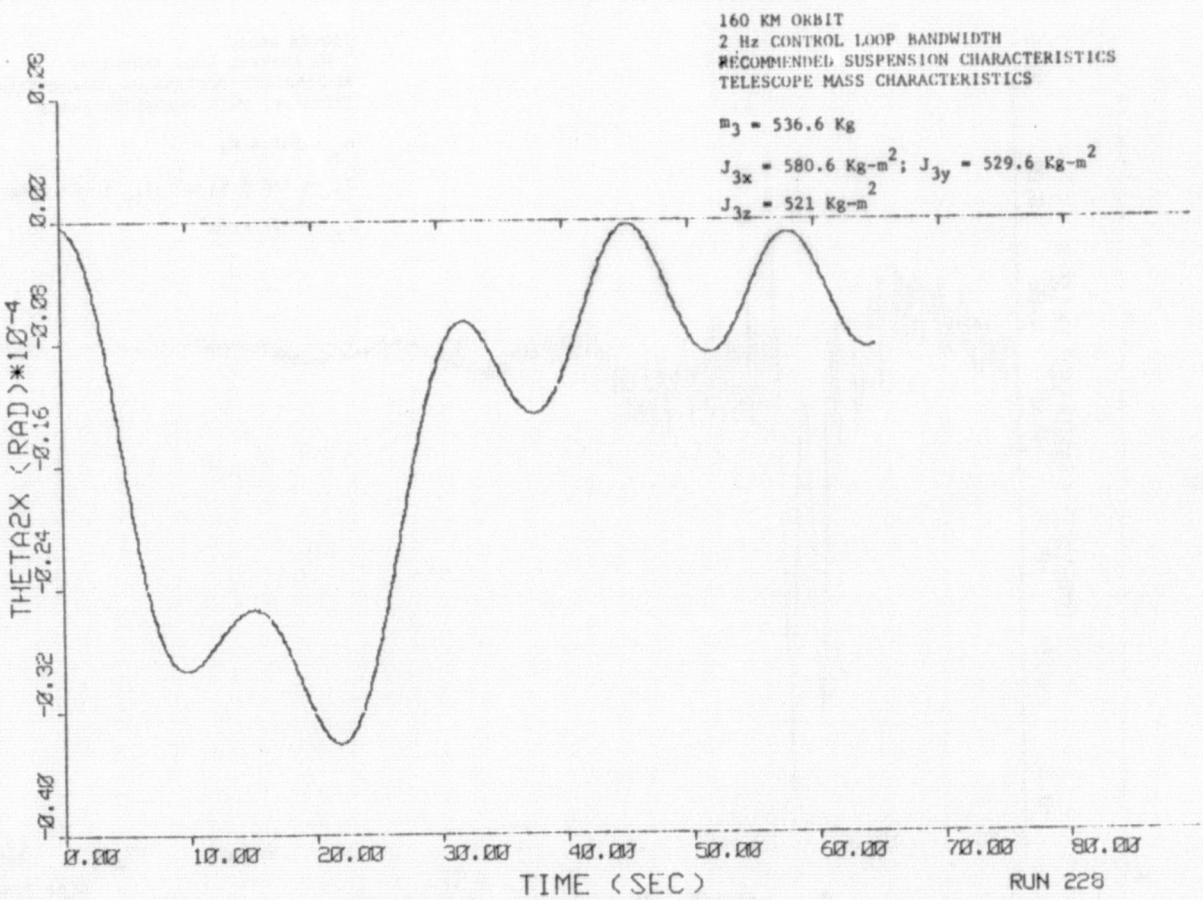


Figure 11-28. Pedestal x-Axis Rotation

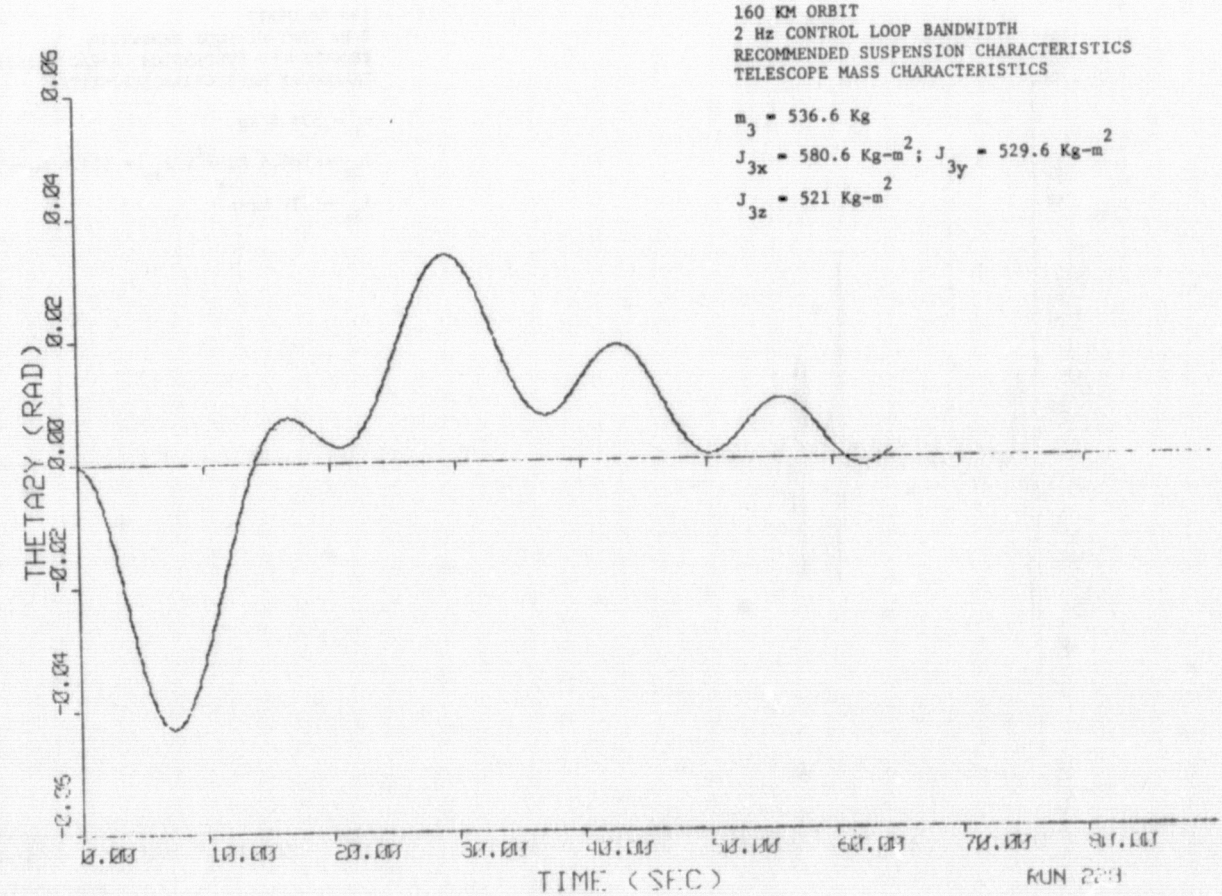


Figure 11-29. Pedestal y-Axis Rotation

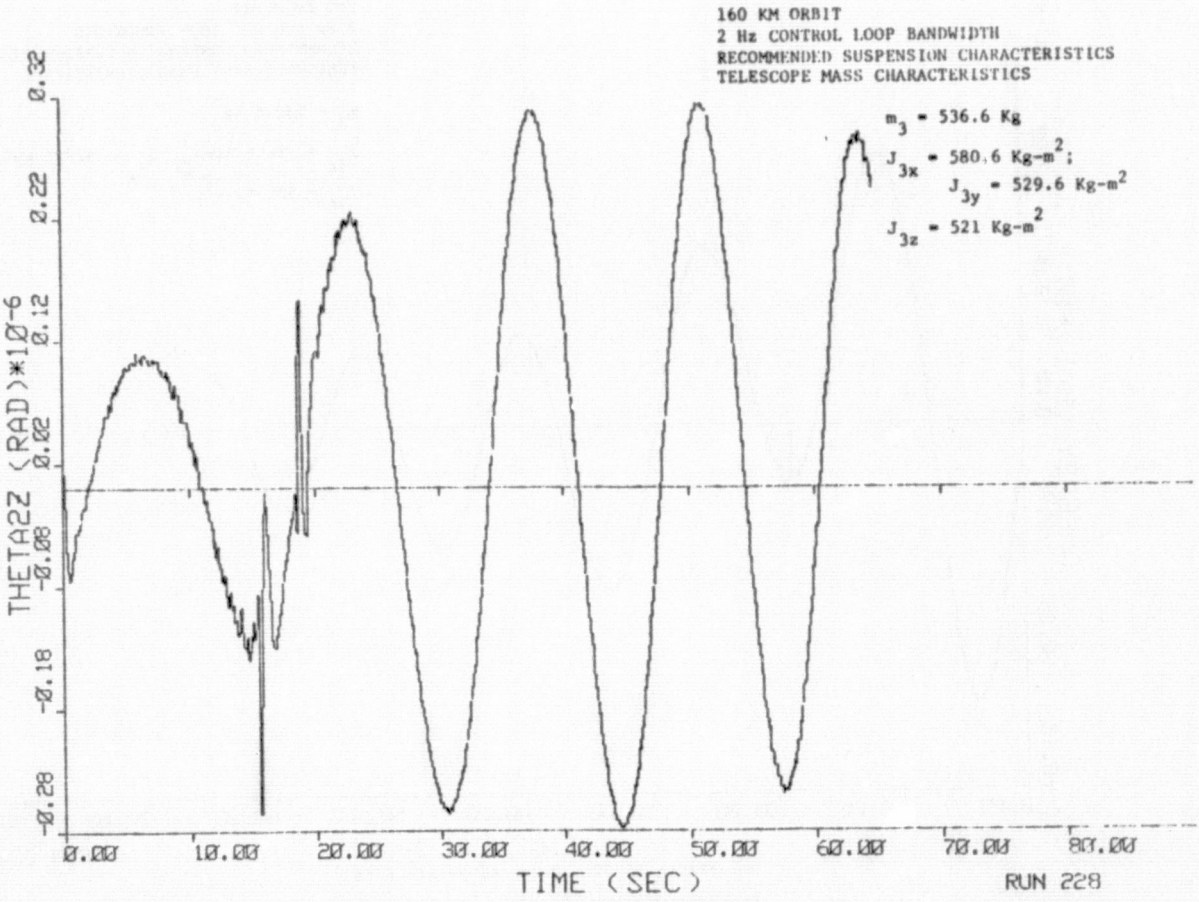


Figure 11-30. Pedestal z-Axis Rotation

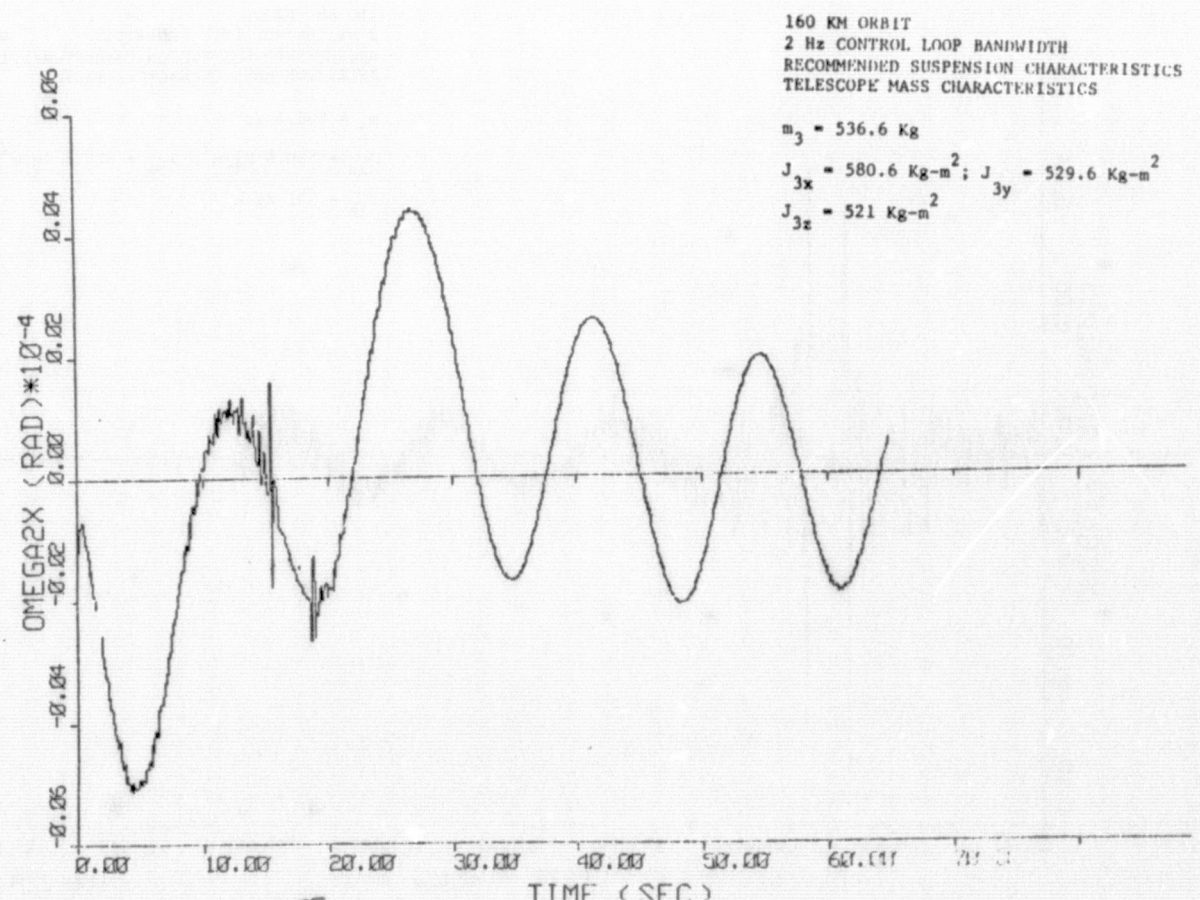


Figure 11-31. Pedestal x-Axis Rate

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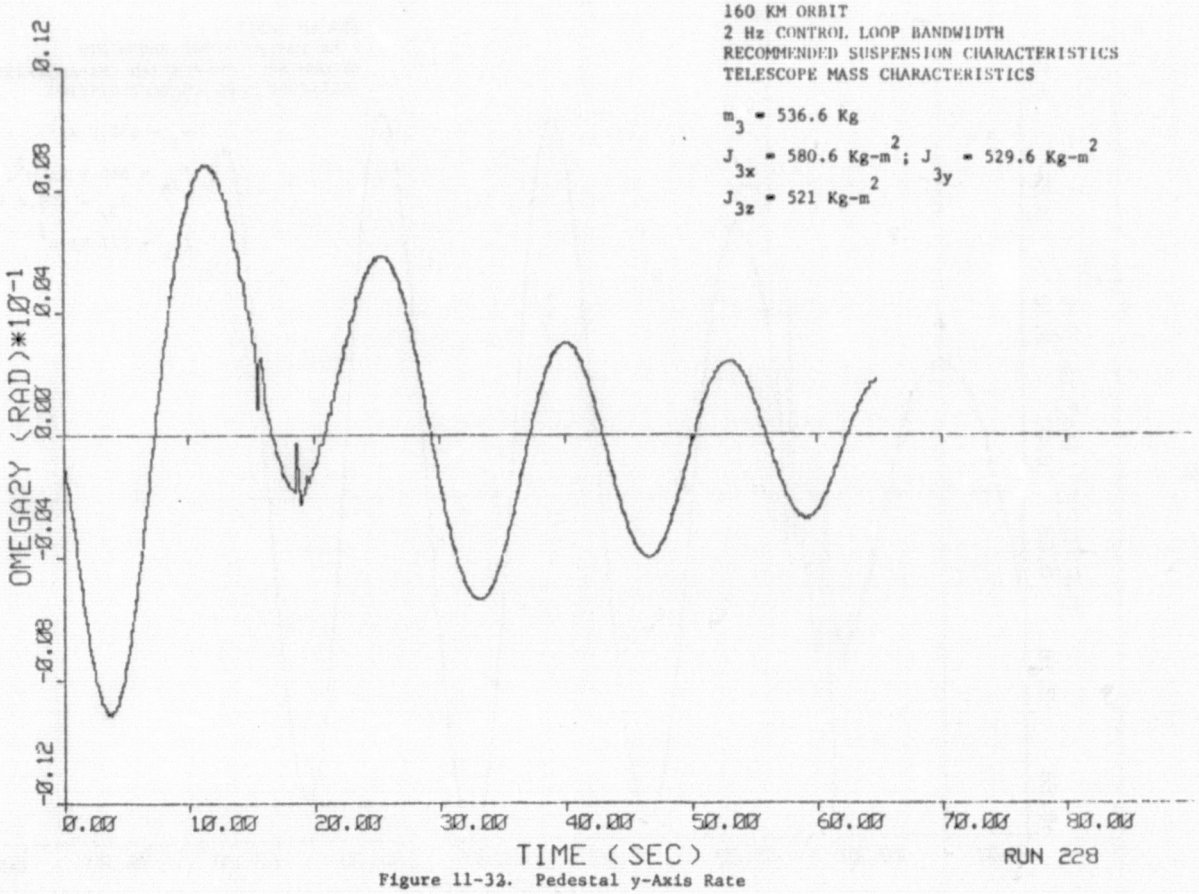


Figure 11-32. Pedestal y-Axis Rate

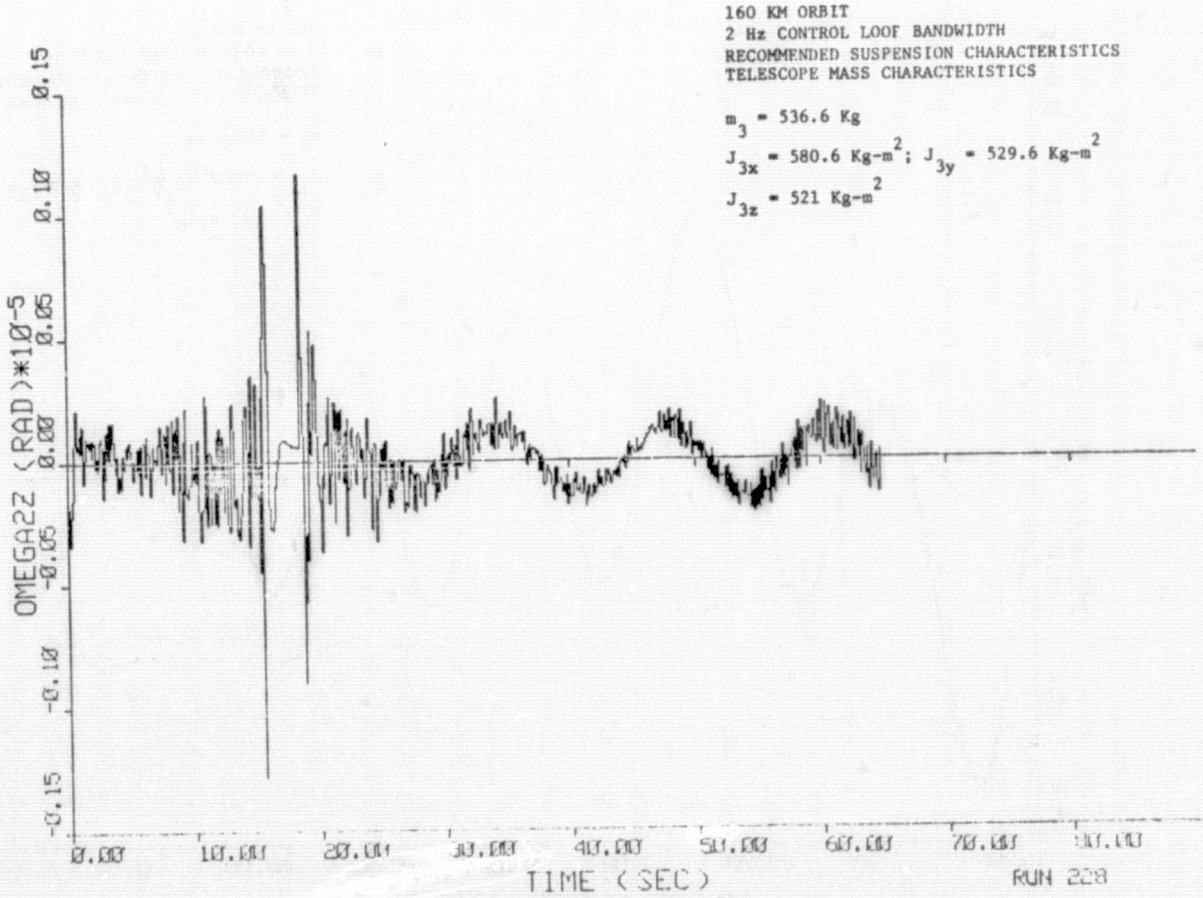


Figure 11-33. Pedestal z-Axis Rate

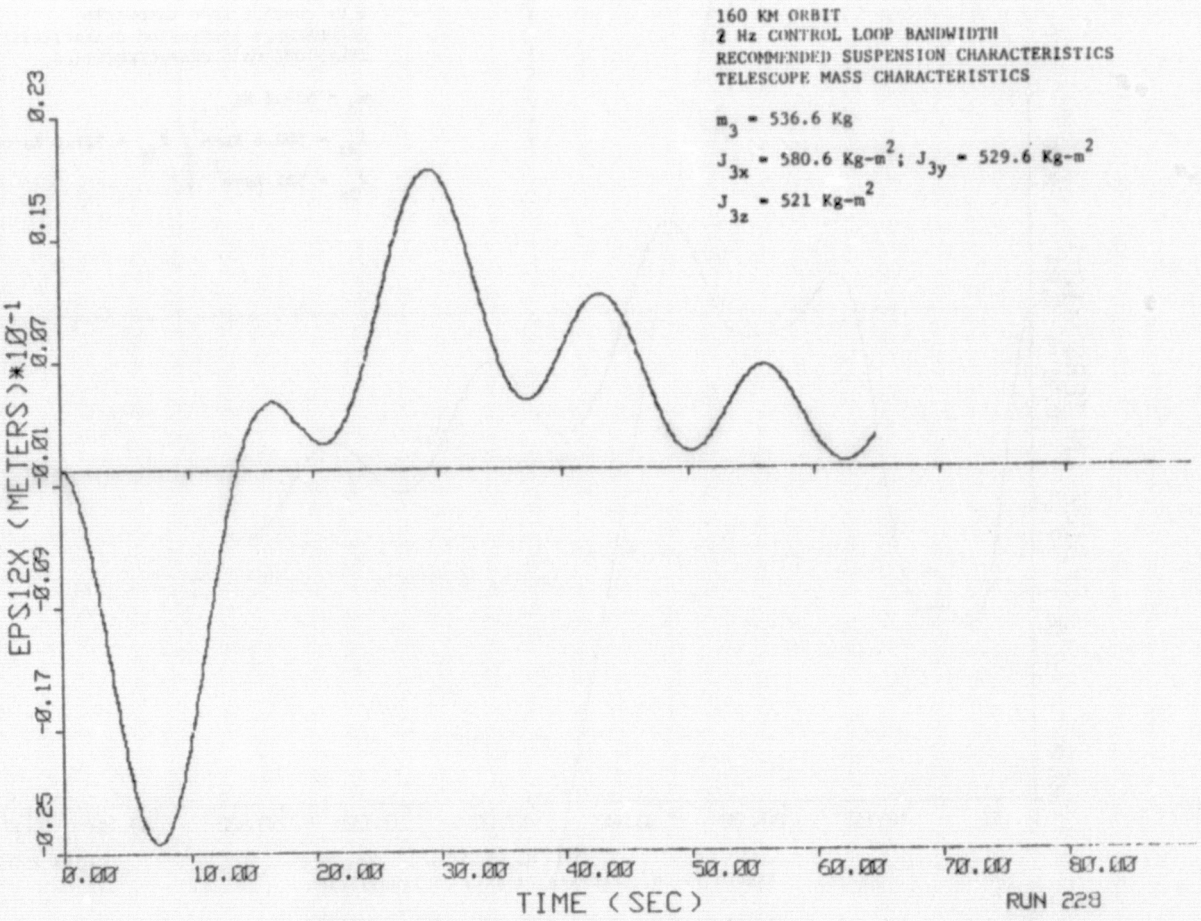


Figure 11-34. Pedestal x-Axis CM Translation

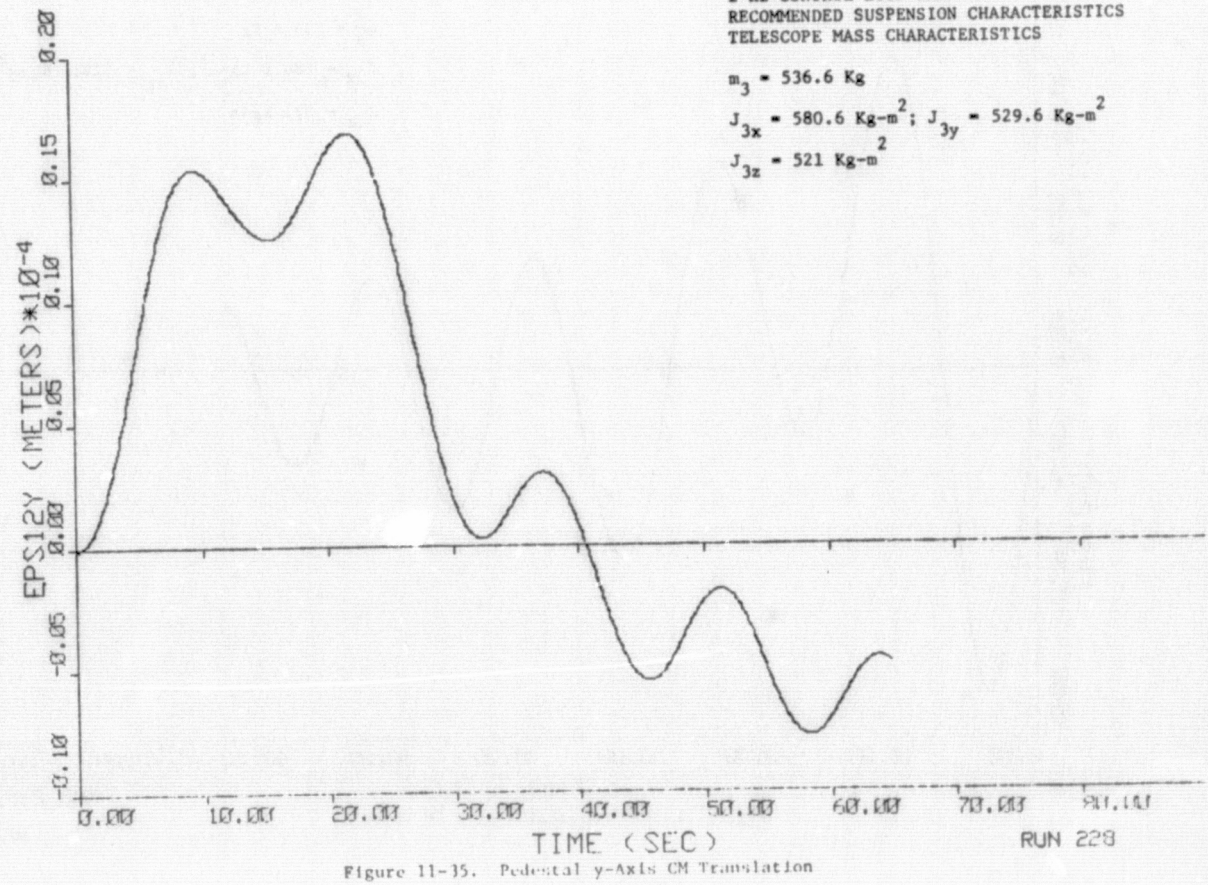


Figure 11-35. Pedestal y-Axis CM Translation

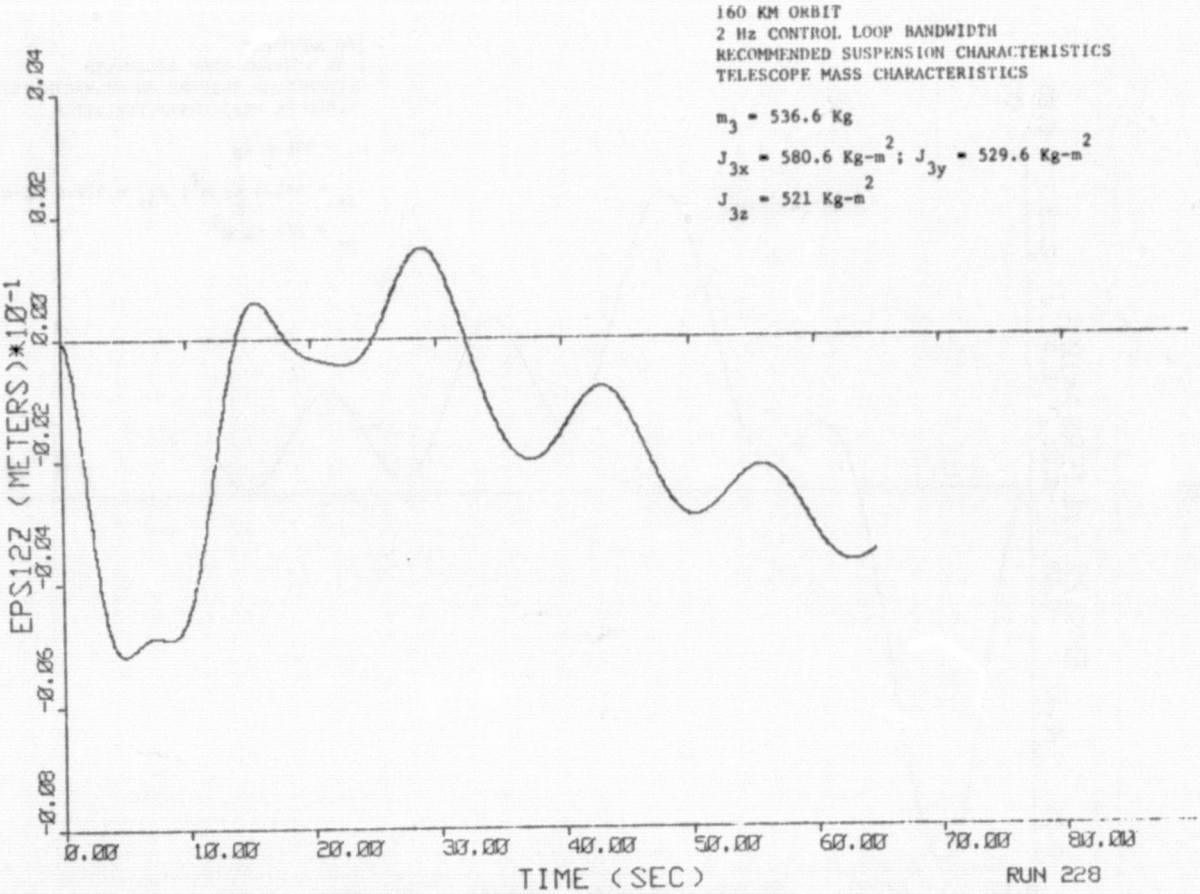


Figure 11-36. Pedestal z-Axis CM Translation

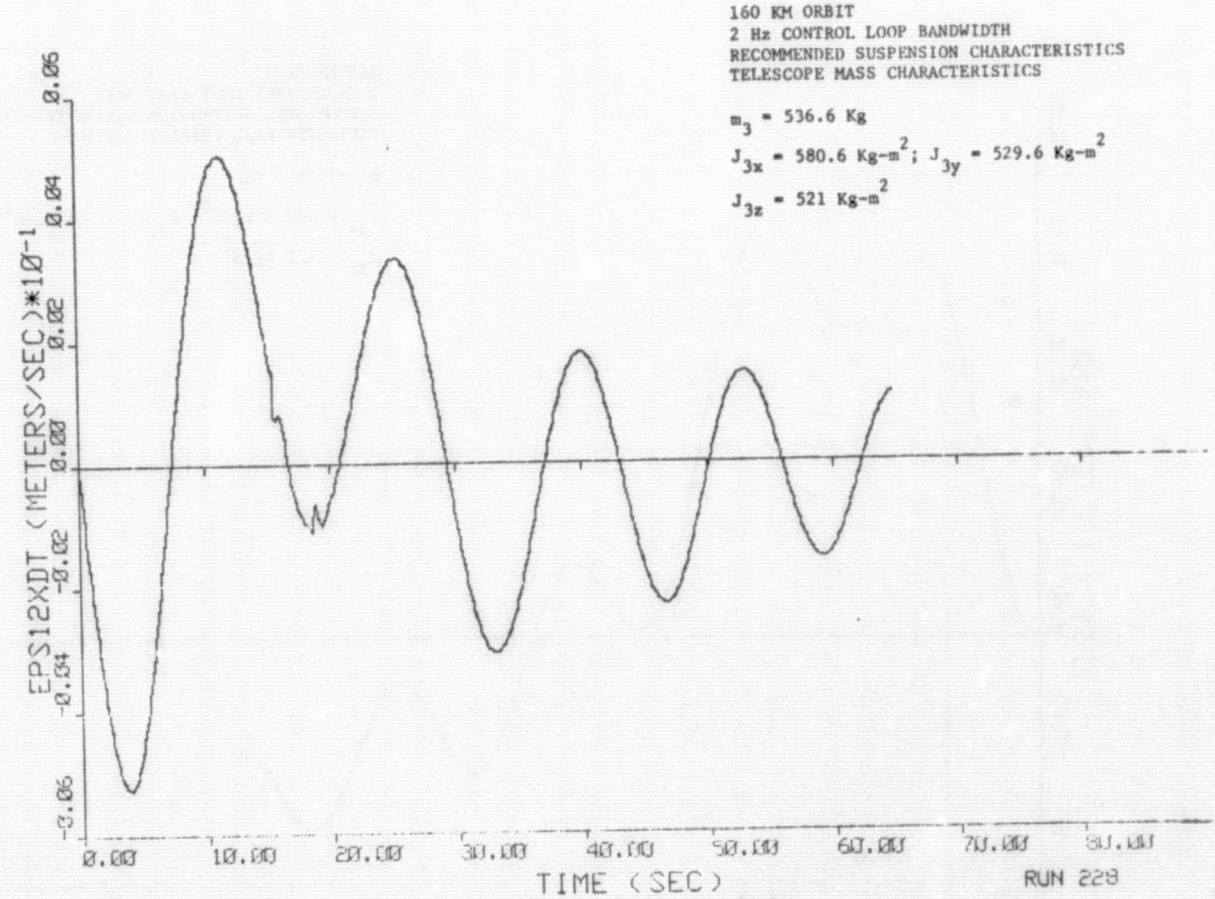


Figure 11-37. Pedestal x-Axis CM Velocity

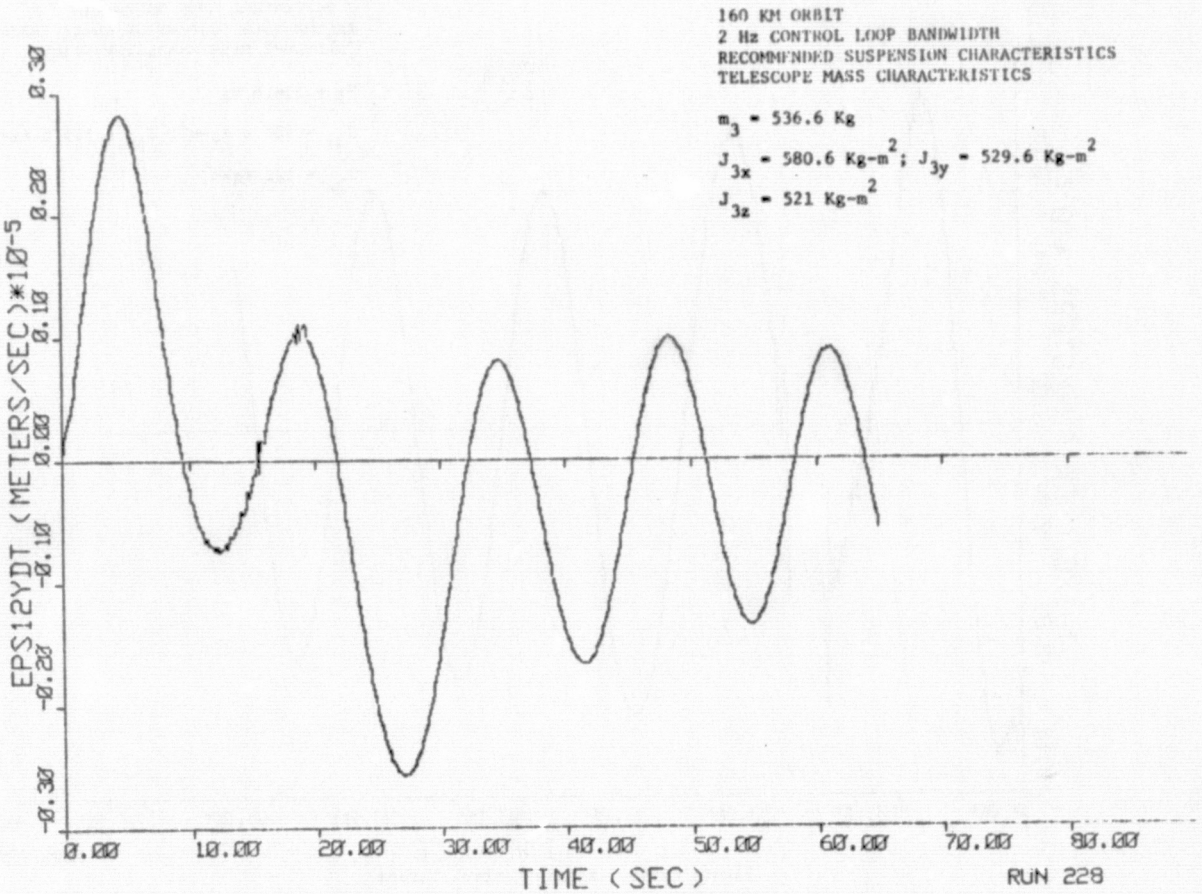


Figure 11-38. Pedestal y-Axis CM Velocity

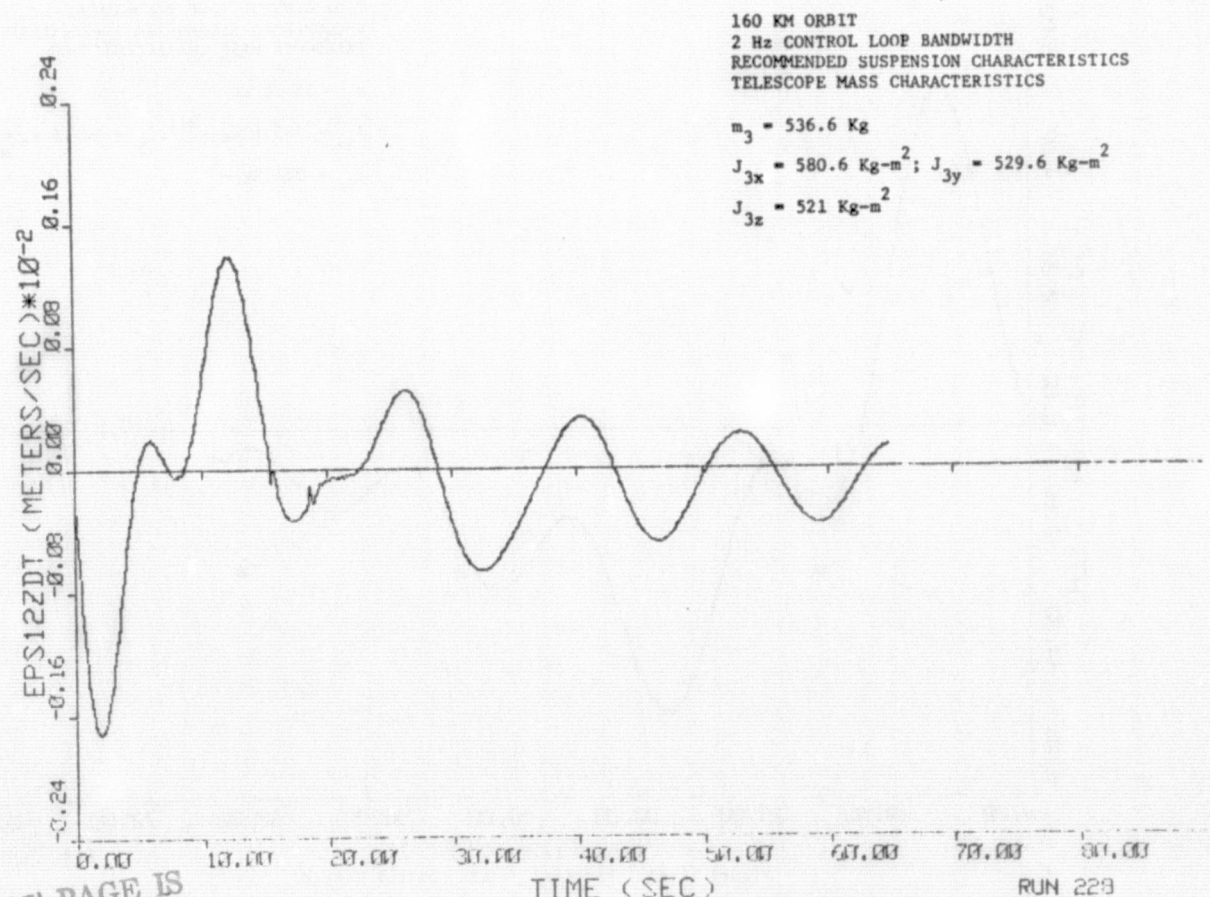


Figure 11-39. Pedestal z-Axis CM Velocity

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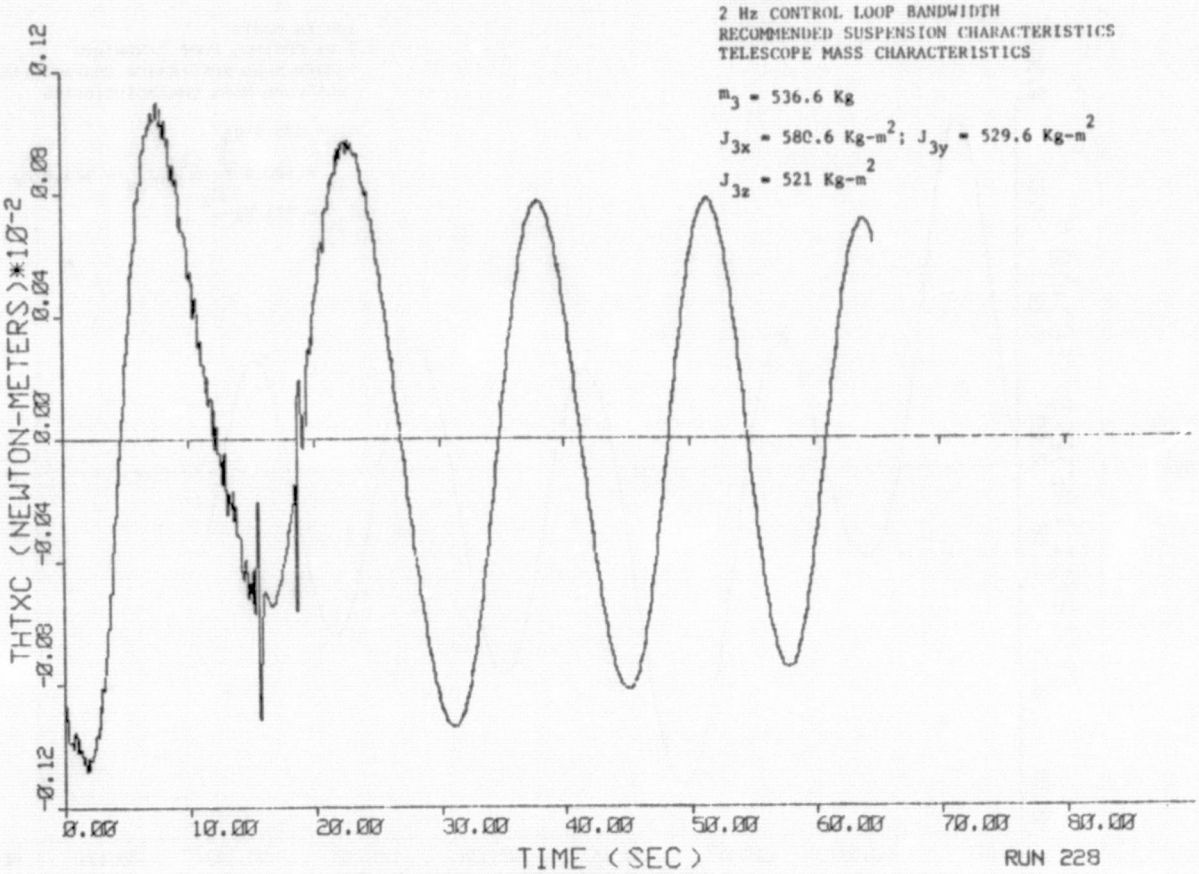


Figure 11-40. x-Axis Control Torque

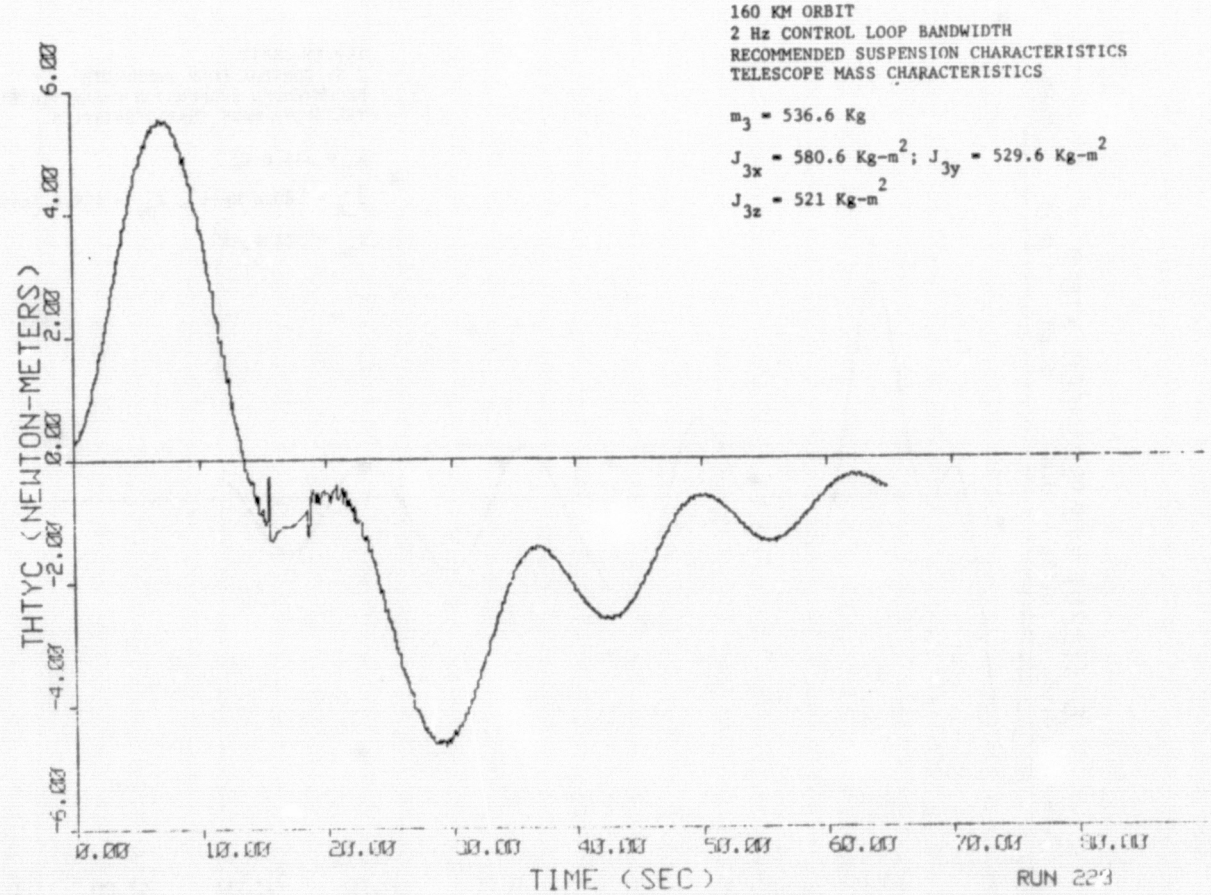


Figure 11-41. Pedestal y-Axis Control Torque

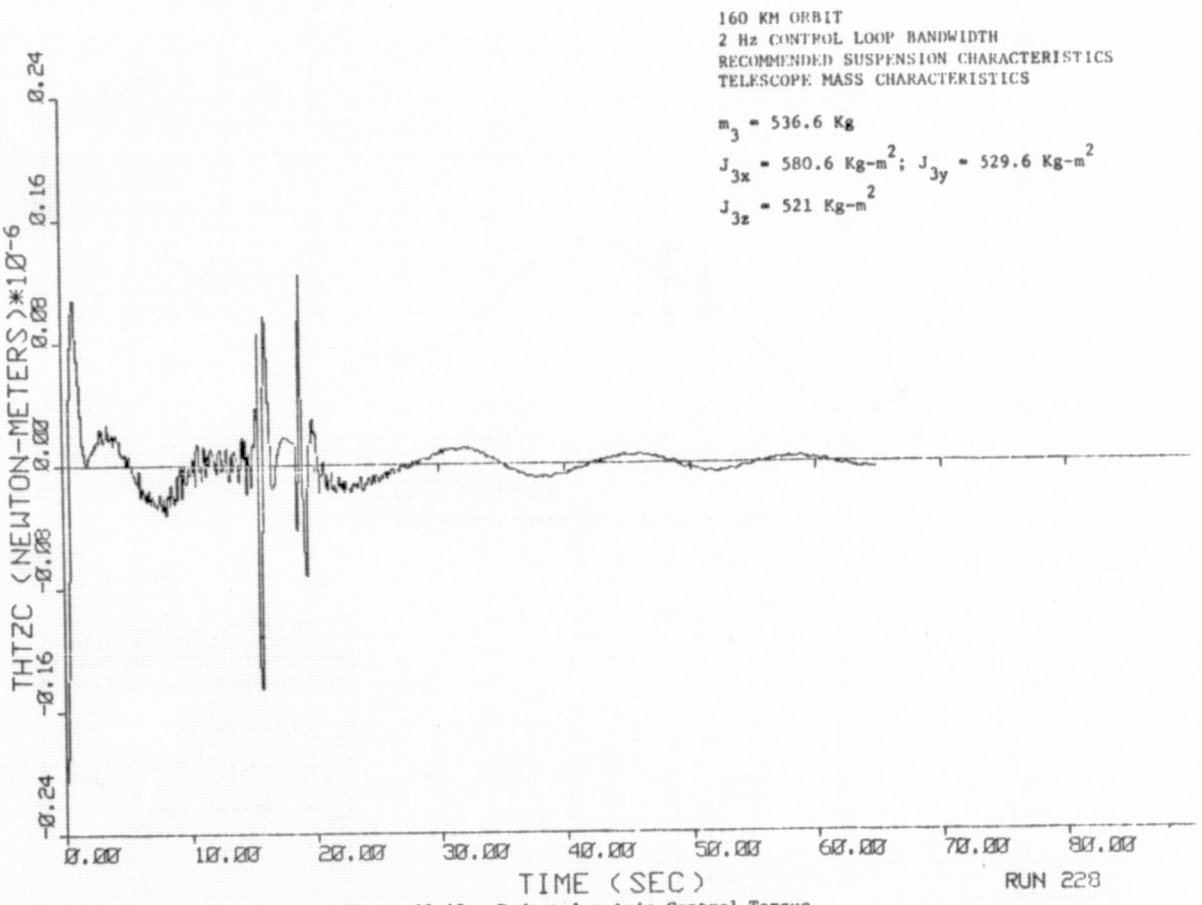


Figure 11-42. Pedestal z-Axis Control Torque

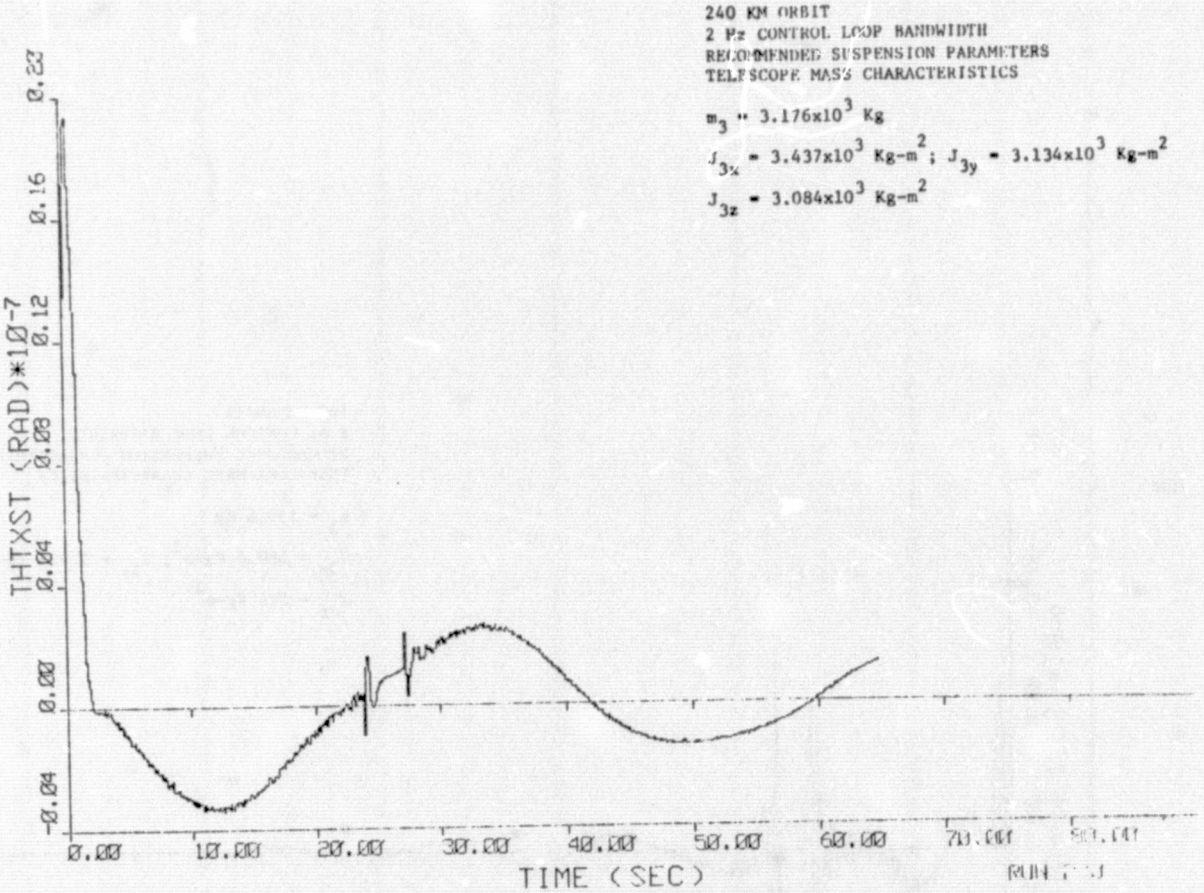


Figure 11-43. Telescope x-Axis Tracking Error

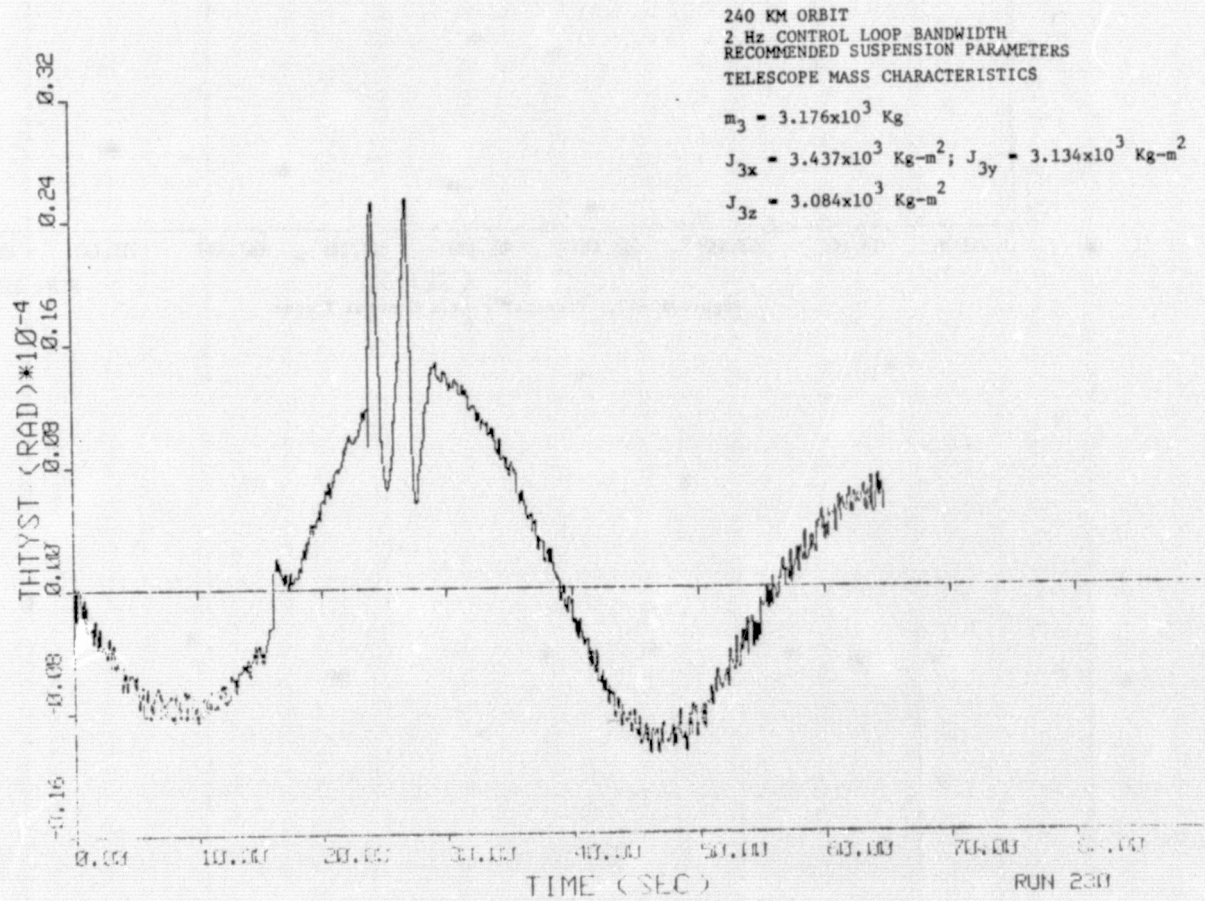


Figure 11-44. Telescope y-Axis Tracking Error

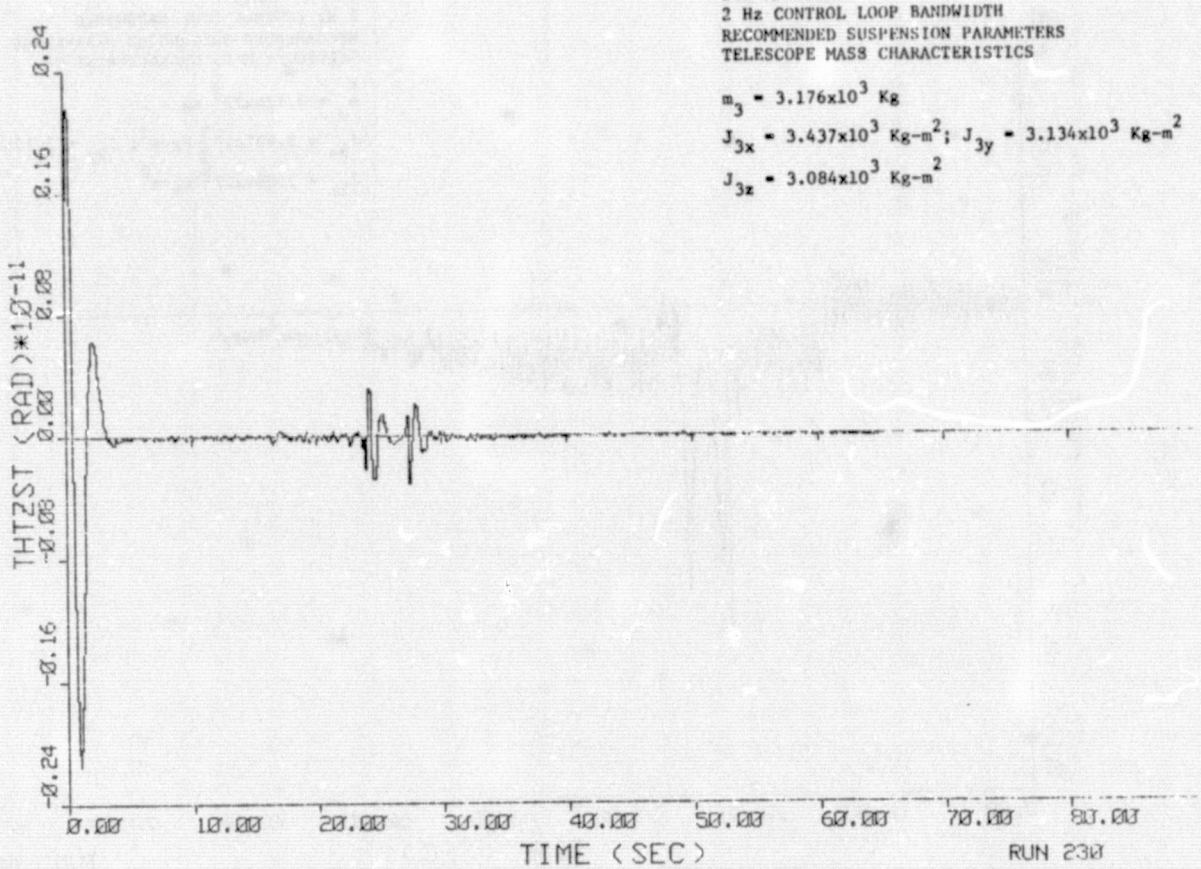


Figure 11-45. Telescope z-Axis Tracking Error

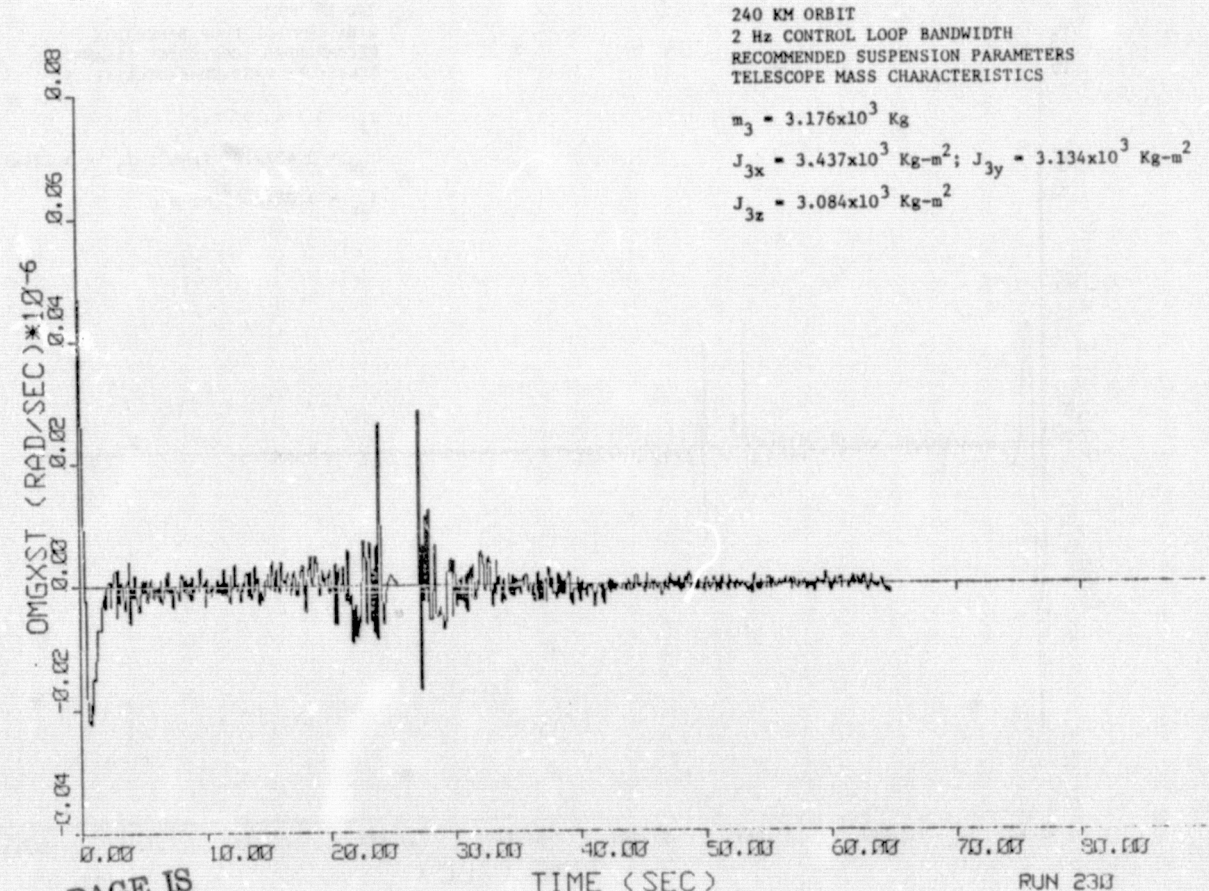


Figure 11-46. Telescope x-Axis Tracking Rate Error

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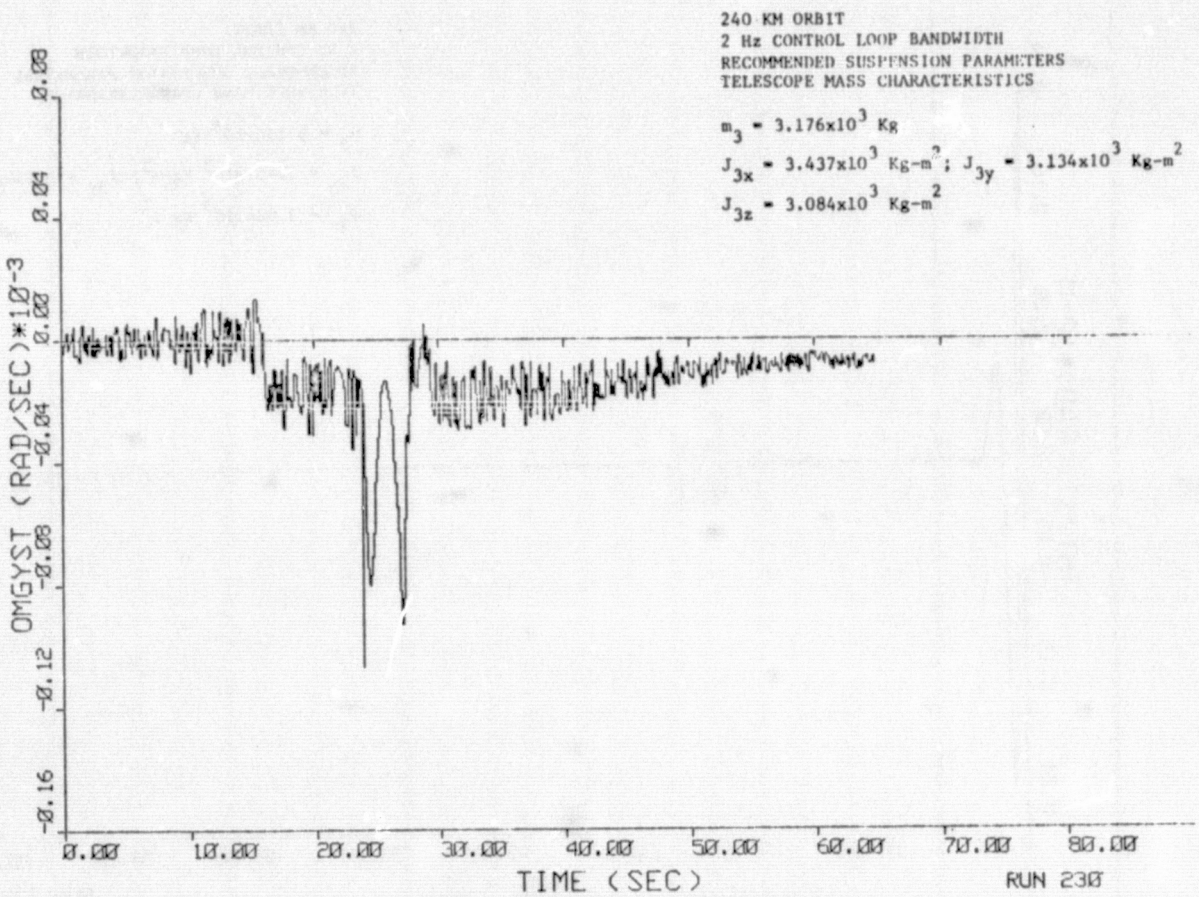


Figure 11-47. Telescope y-Axis Tracking Rate Error

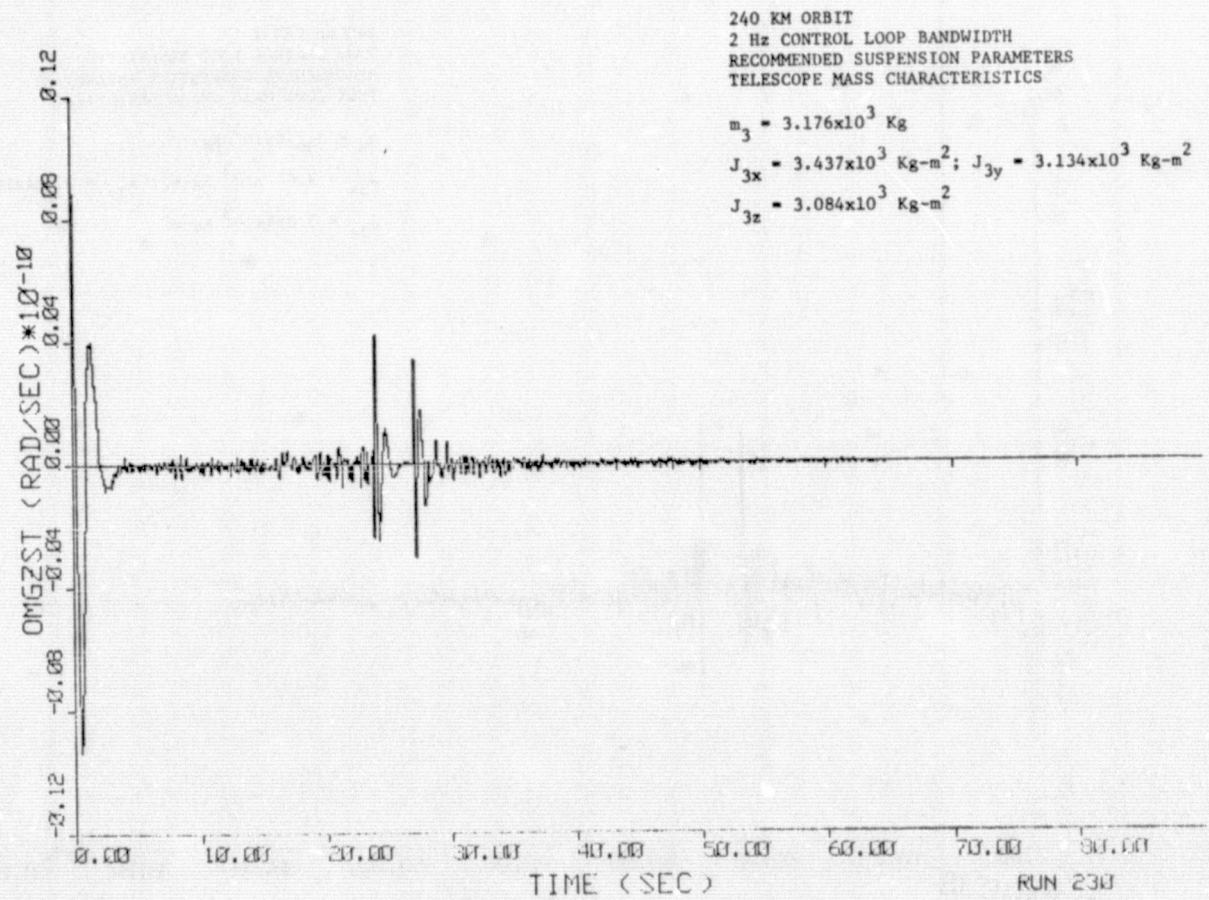


Figure 11-48. Telescope z-Axis Tracking Rate Error

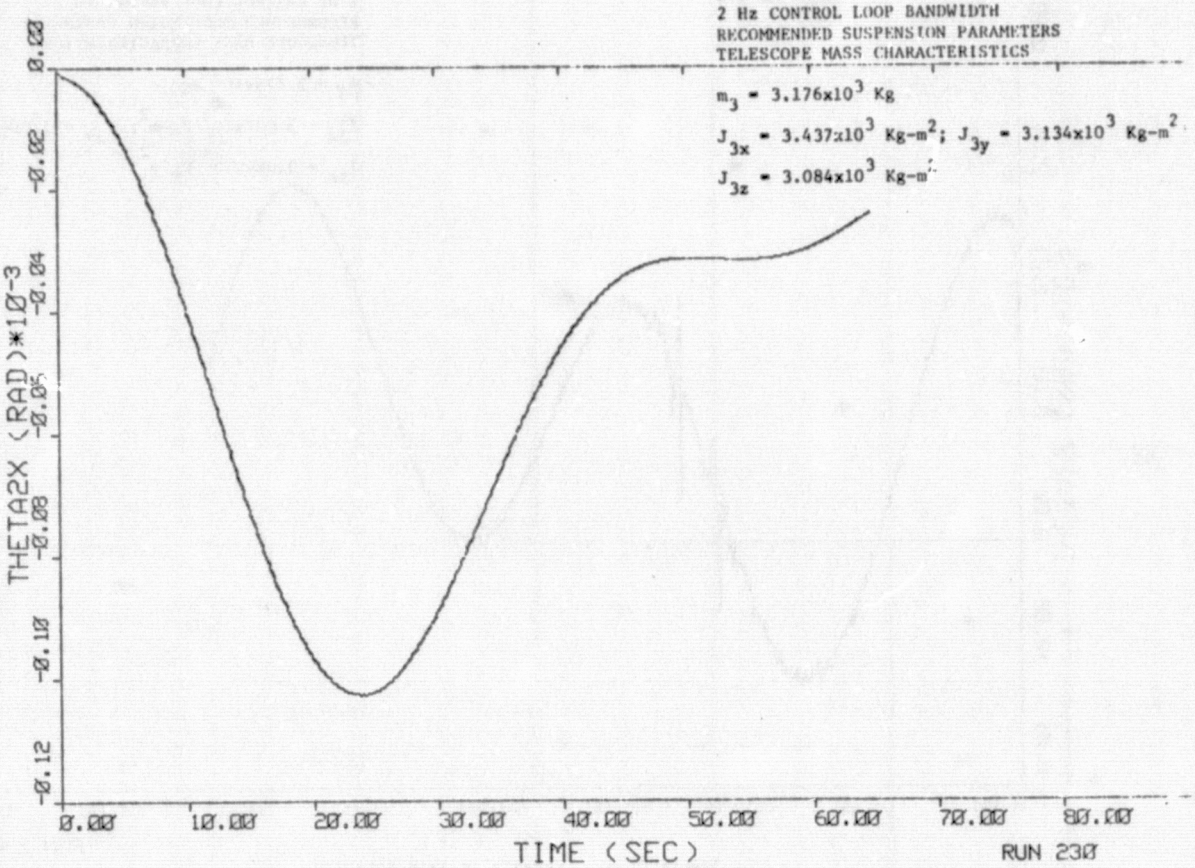


Figure 11-49. Pedestal x-Axis Rotation

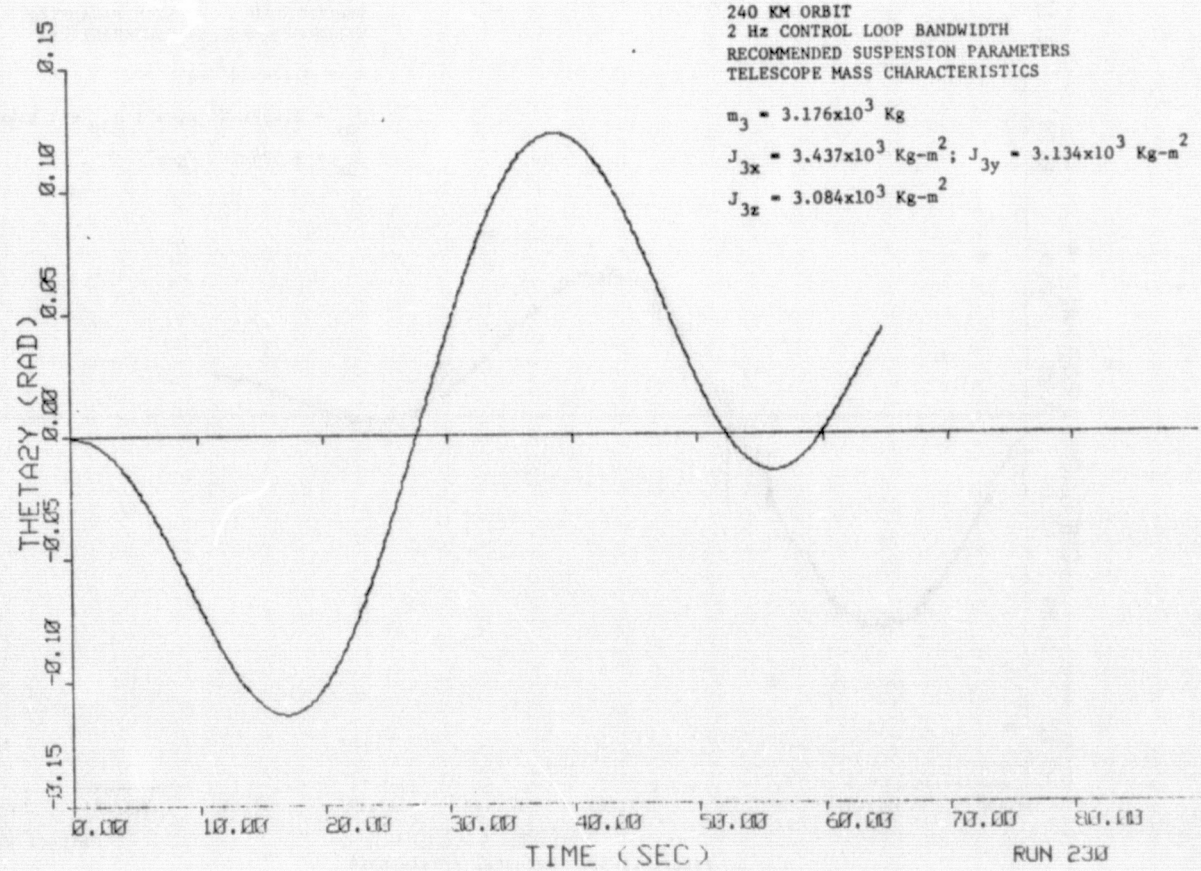


Figure 11-50. Pedestal y-Axis Rotation

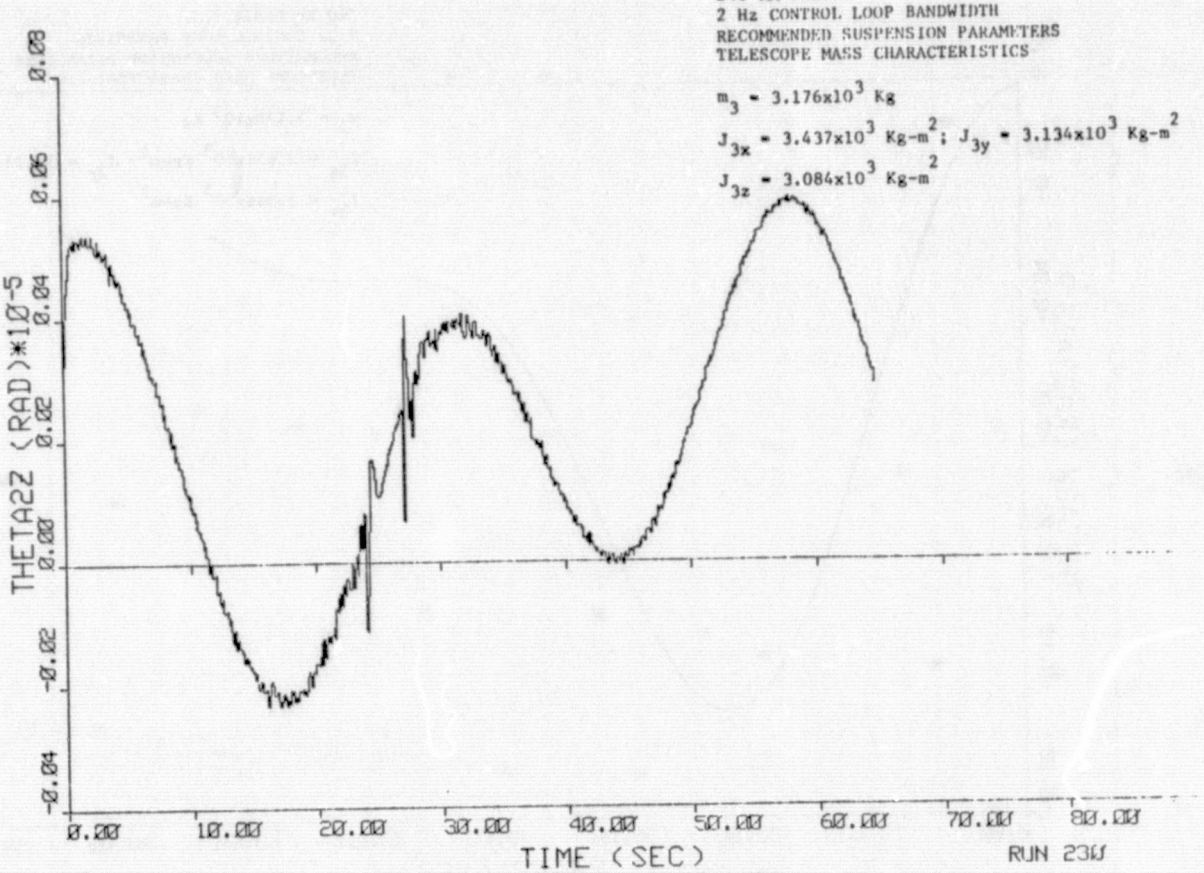


Figure 11-51. Pedestal z-Axis Rotation

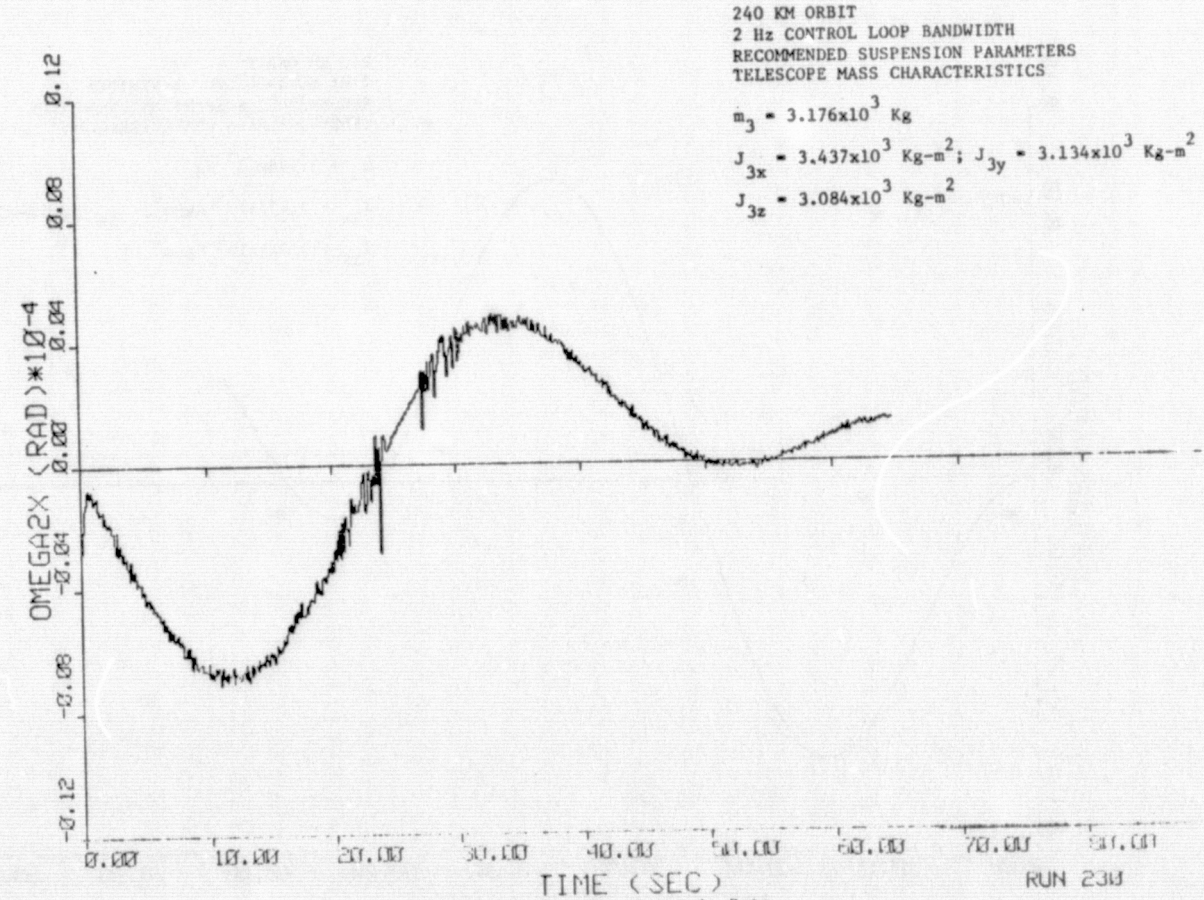


Figure 11-52. Pedestal x-Axis Rate

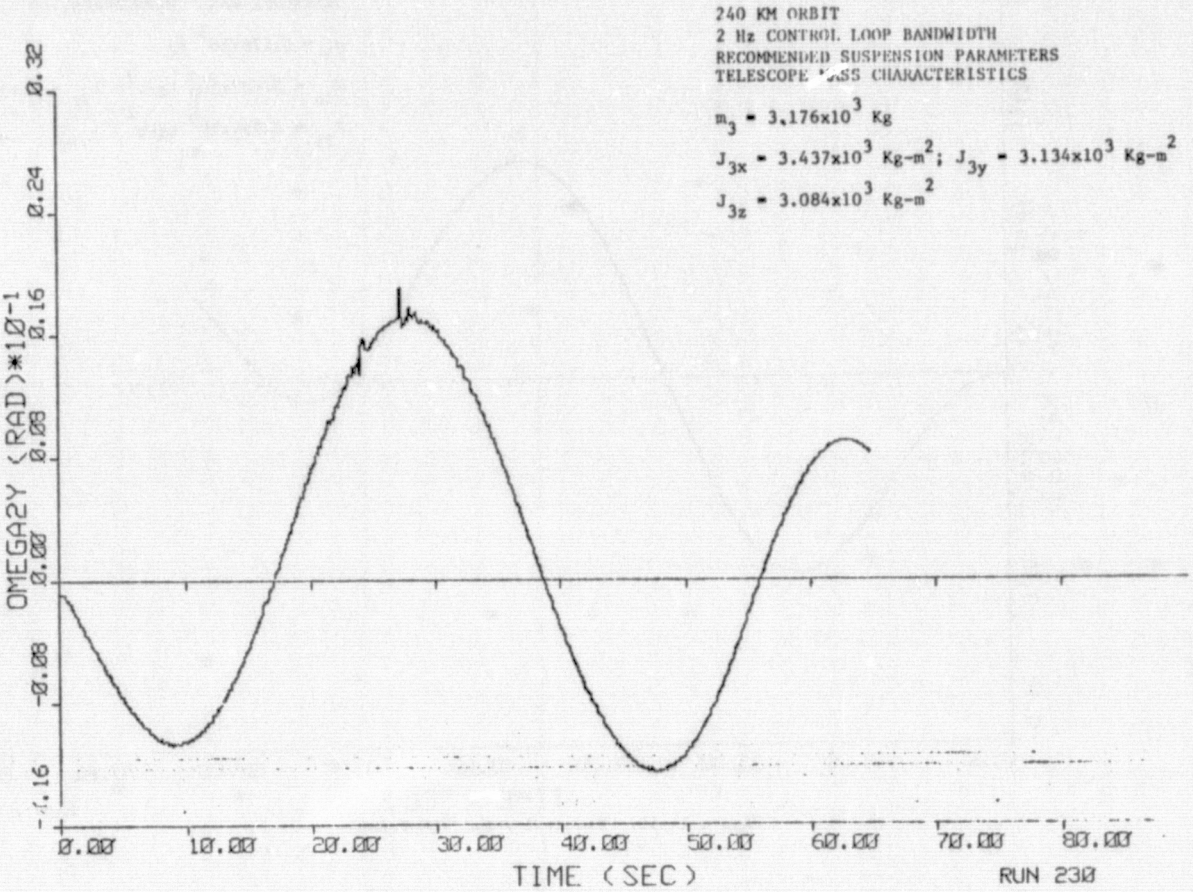


Figure 11-53. Pedestal y-Axis Rate

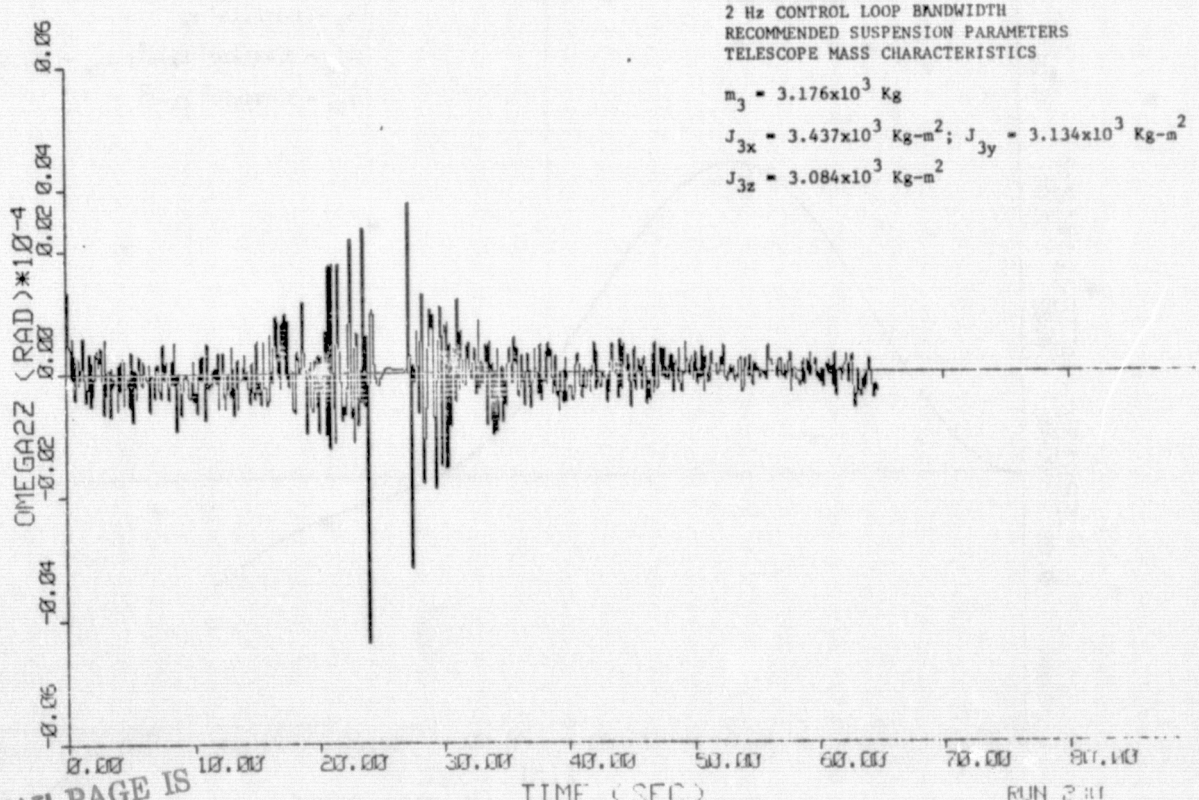


Figure 11-54. Pedestal z-Axis Rate

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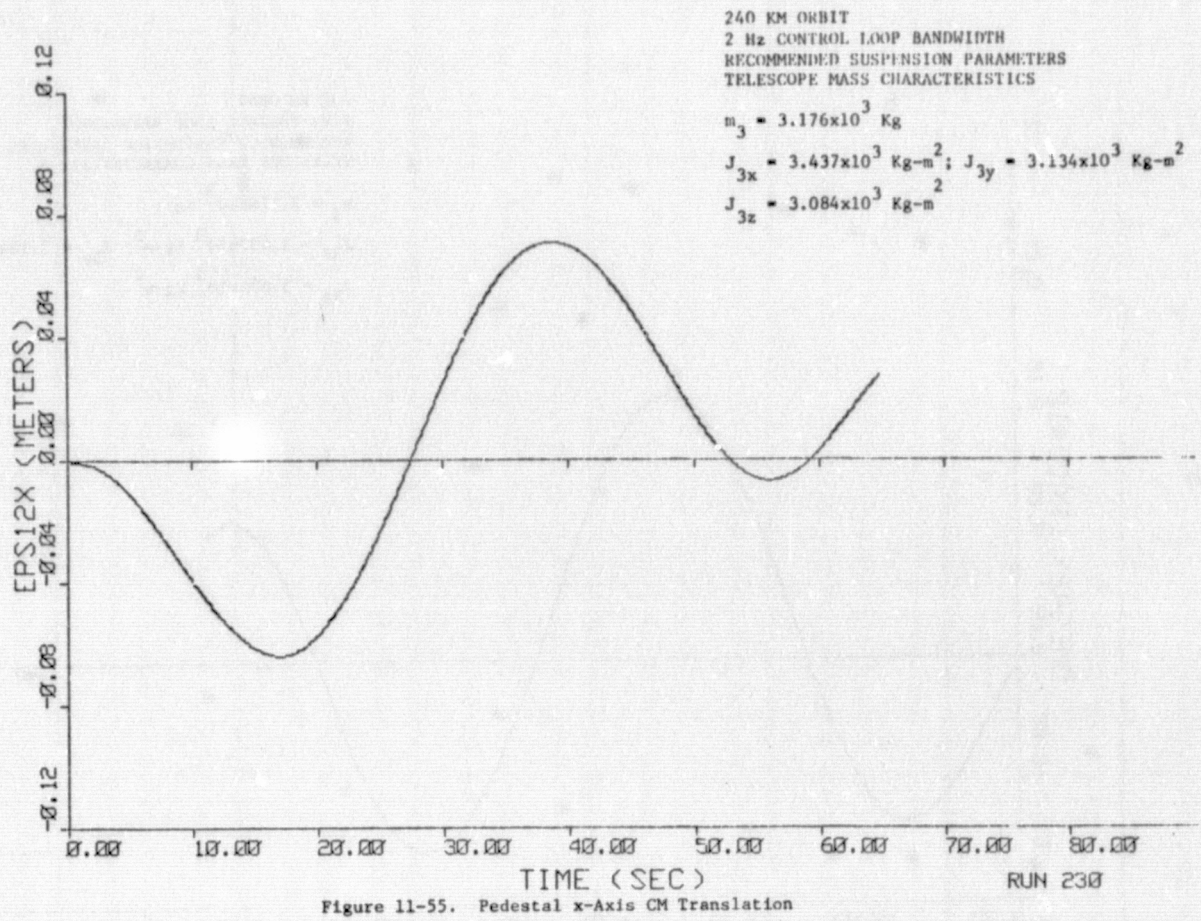


Figure 11-55. Pedestal x-Axis CM Translation

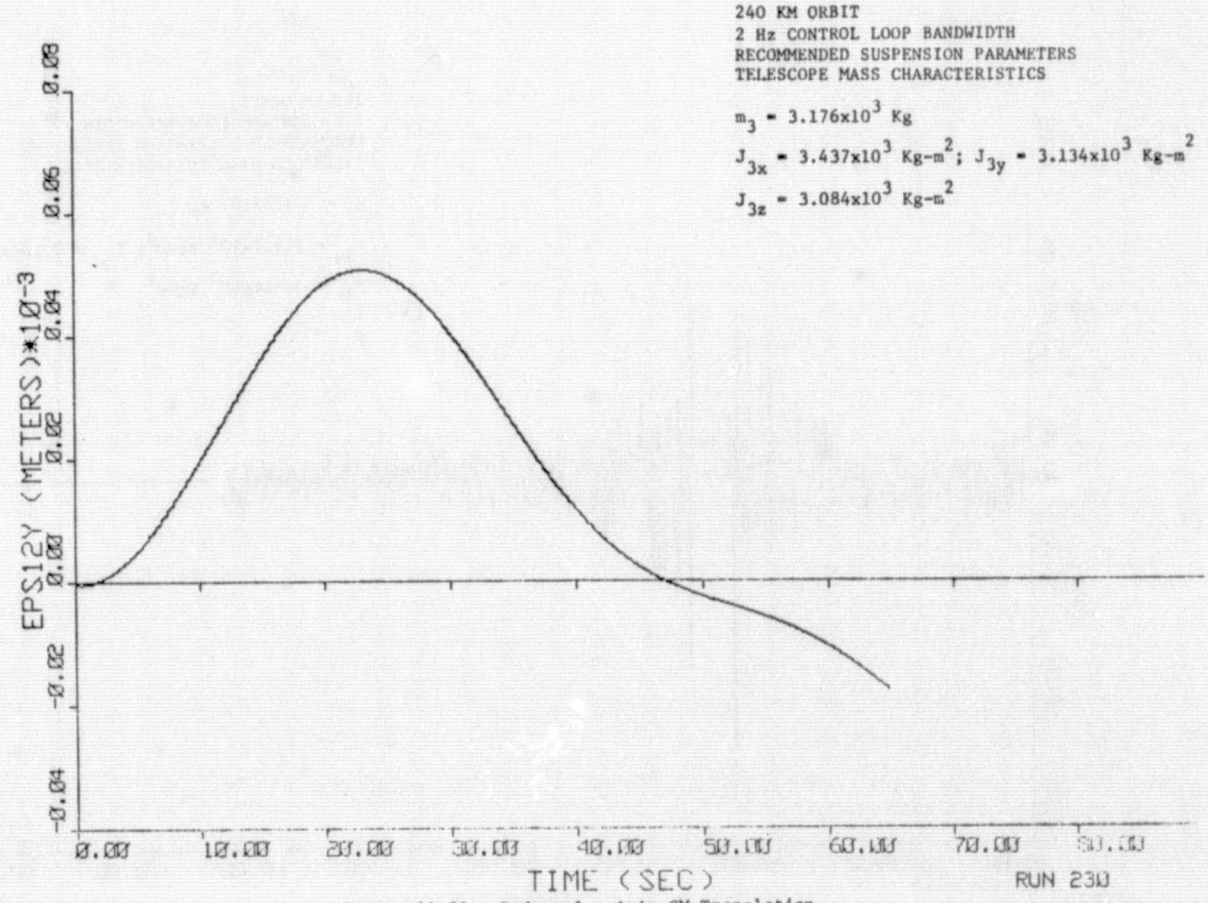


Figure 11-56. Pedestal y-Axis CM Translation

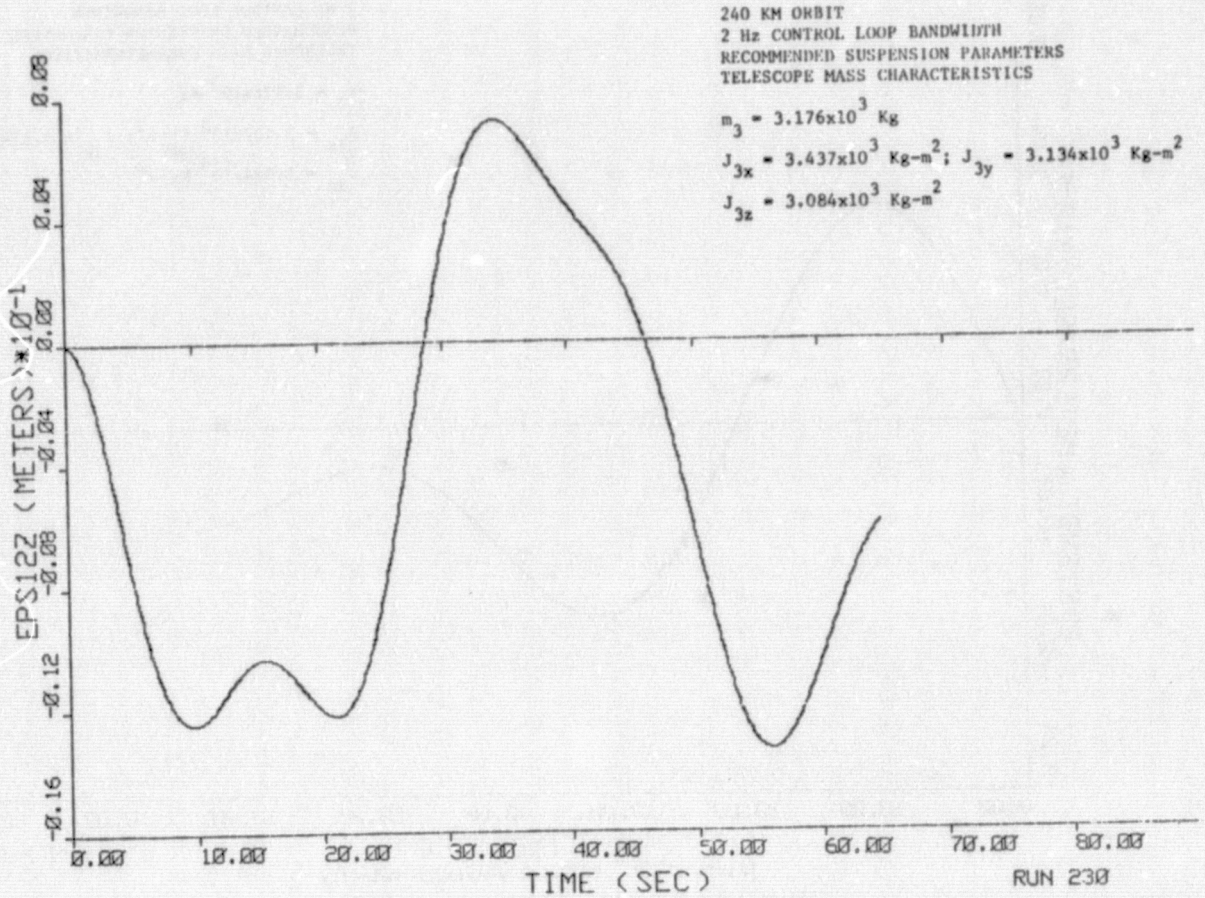


Figure 11-57. Pedestal z-Axis CM Translation

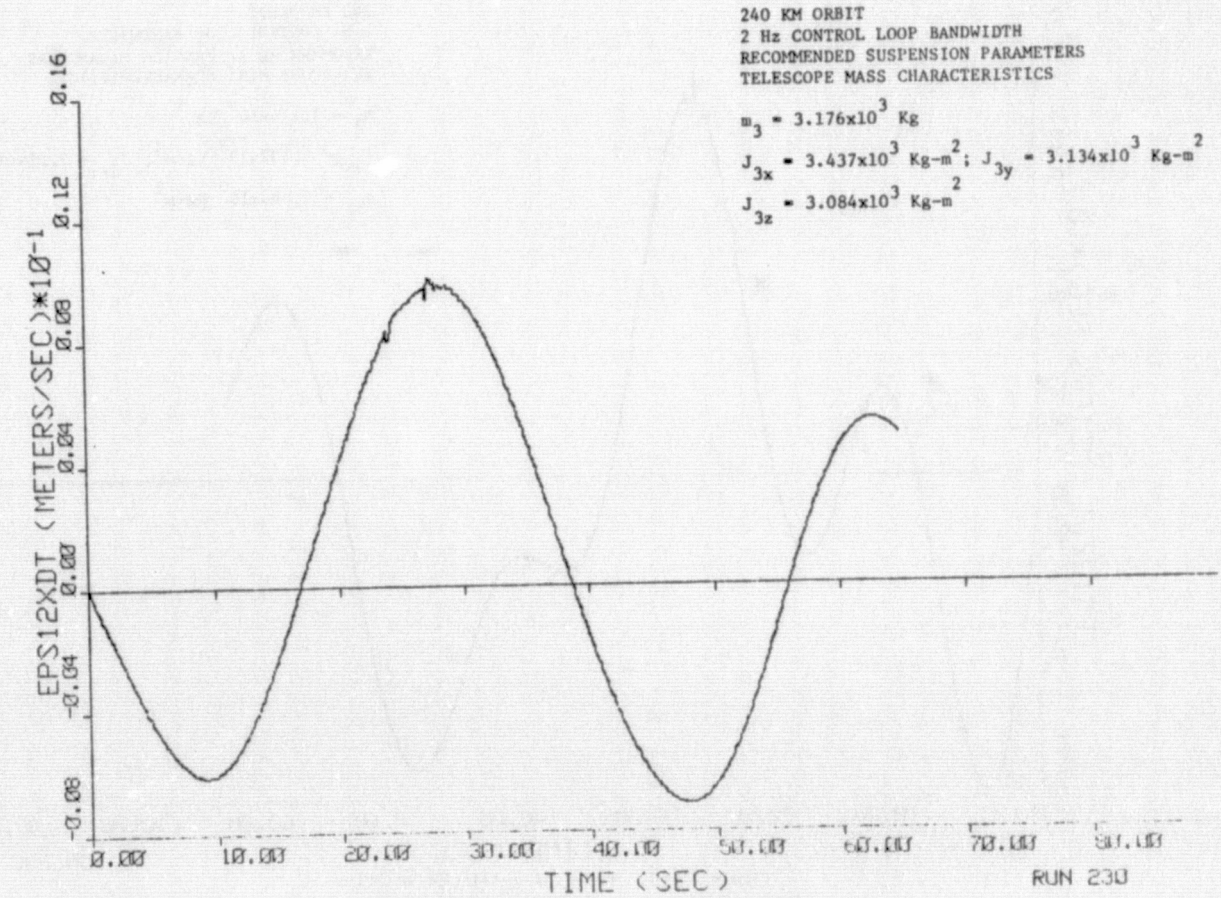


Figure 11-58. Pedestal x-Axis CM Velocity

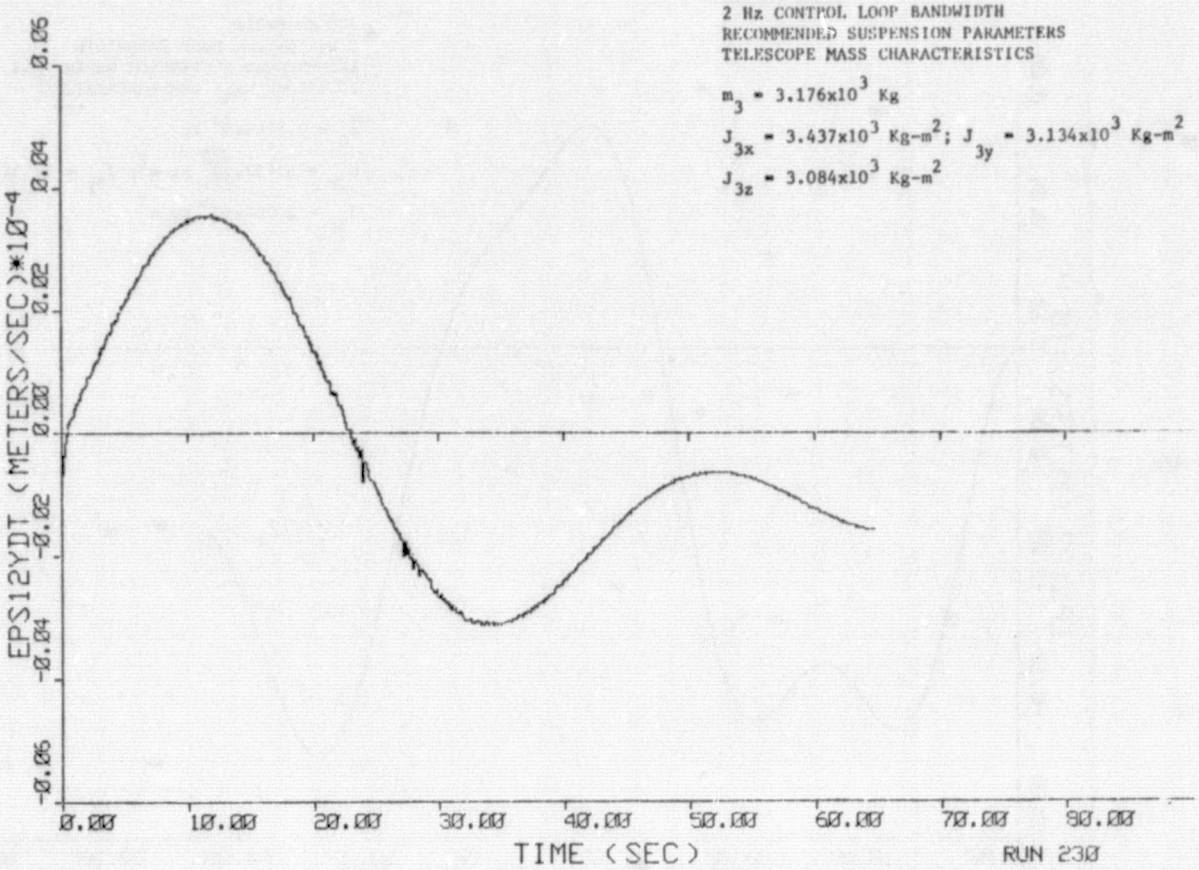


Figure 11-59. Pedestal y-Axis CM Velocity

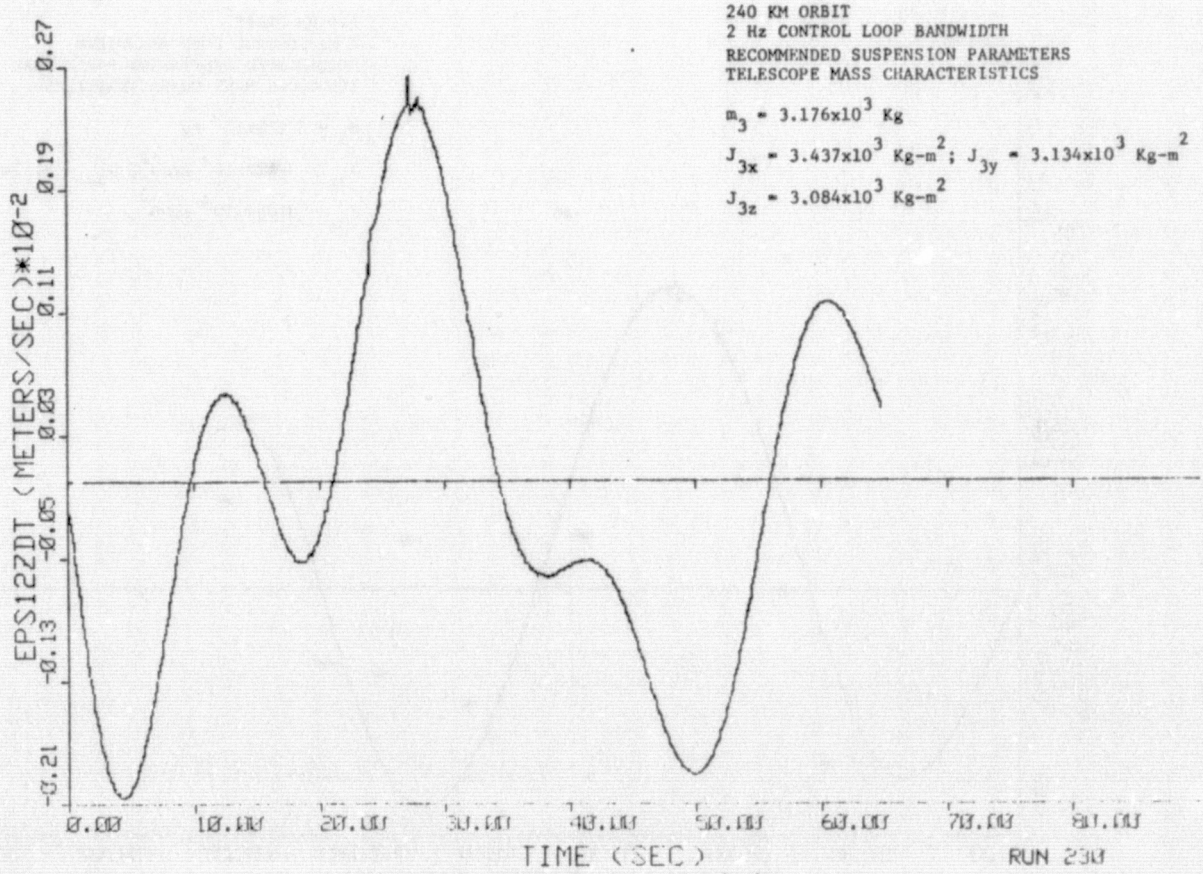


Figure 11-60. Pedestal z-Axis CM Velocity

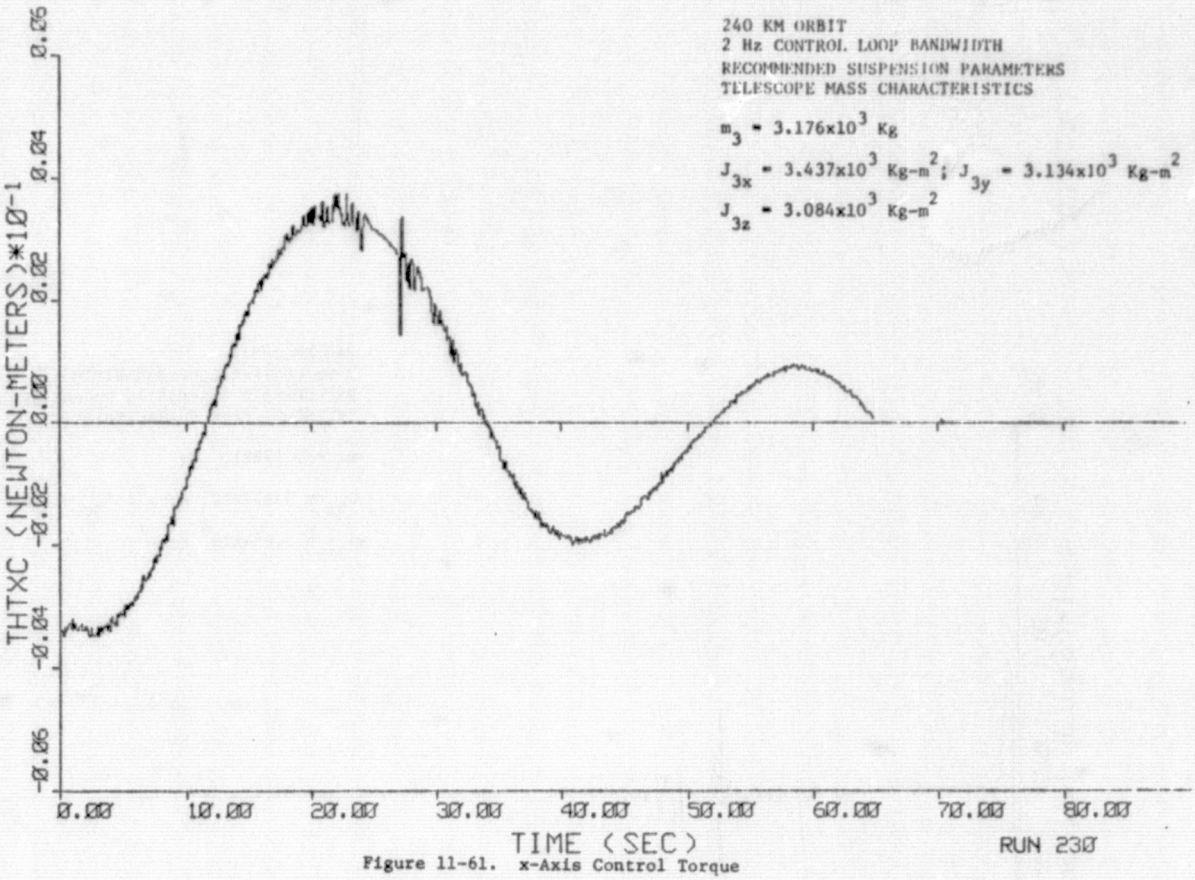


Figure 11-61. x-Axis Control Torque

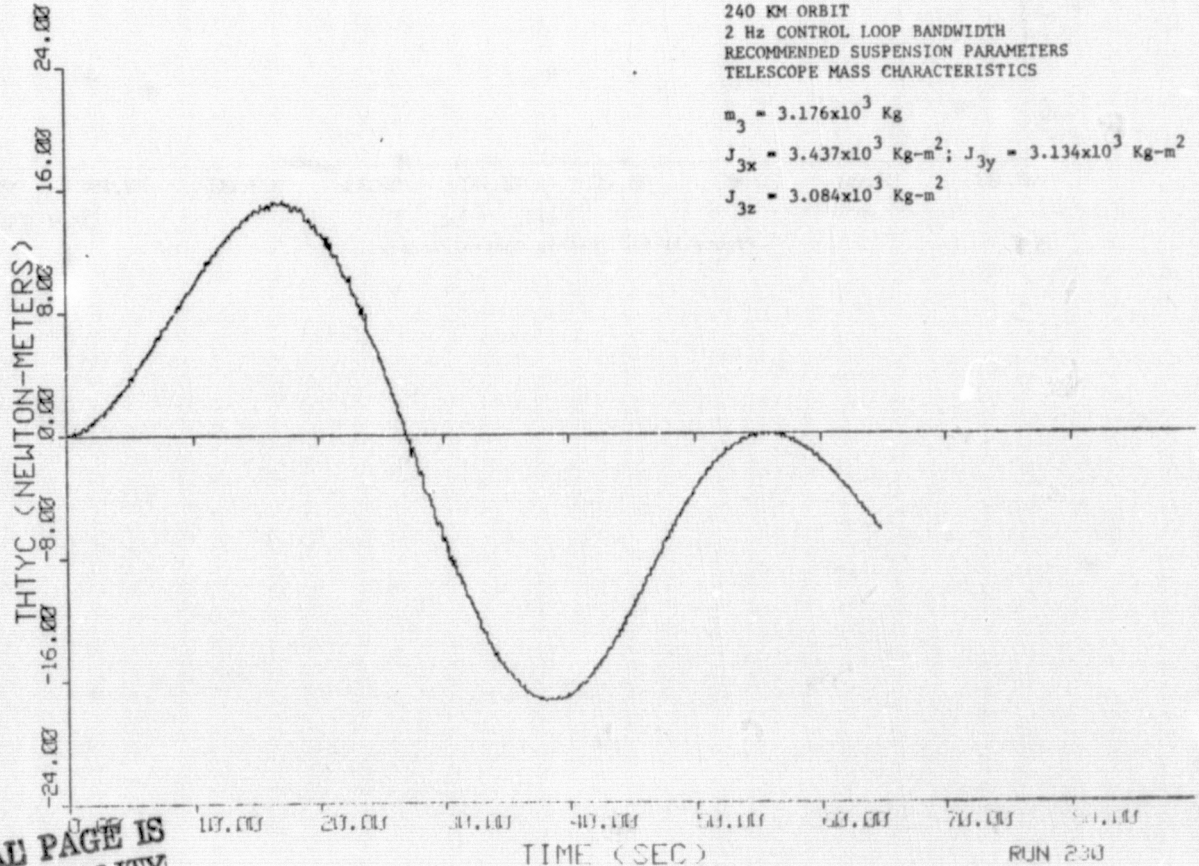


Figure 11-62. y-Axis Control Torque

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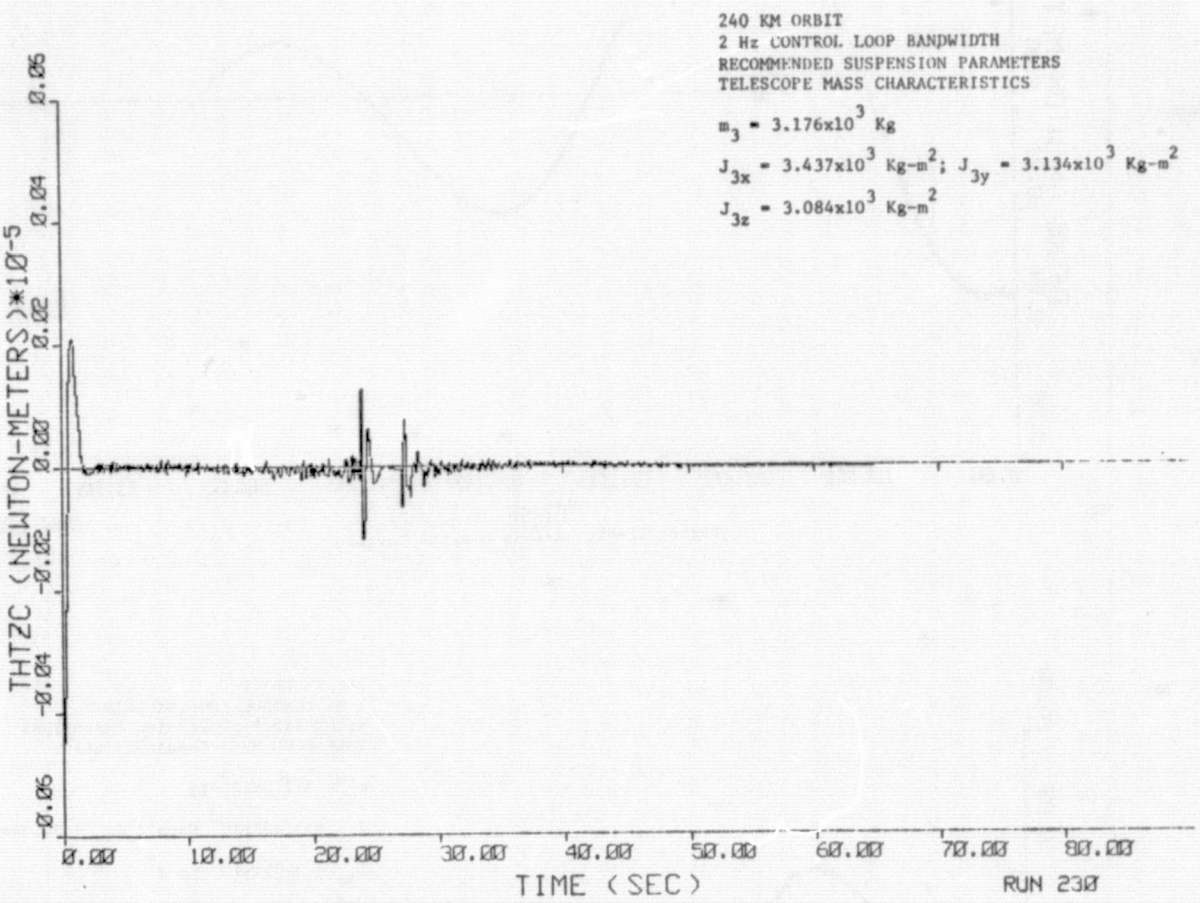


Figure 11-63. z-Axis Control Torque

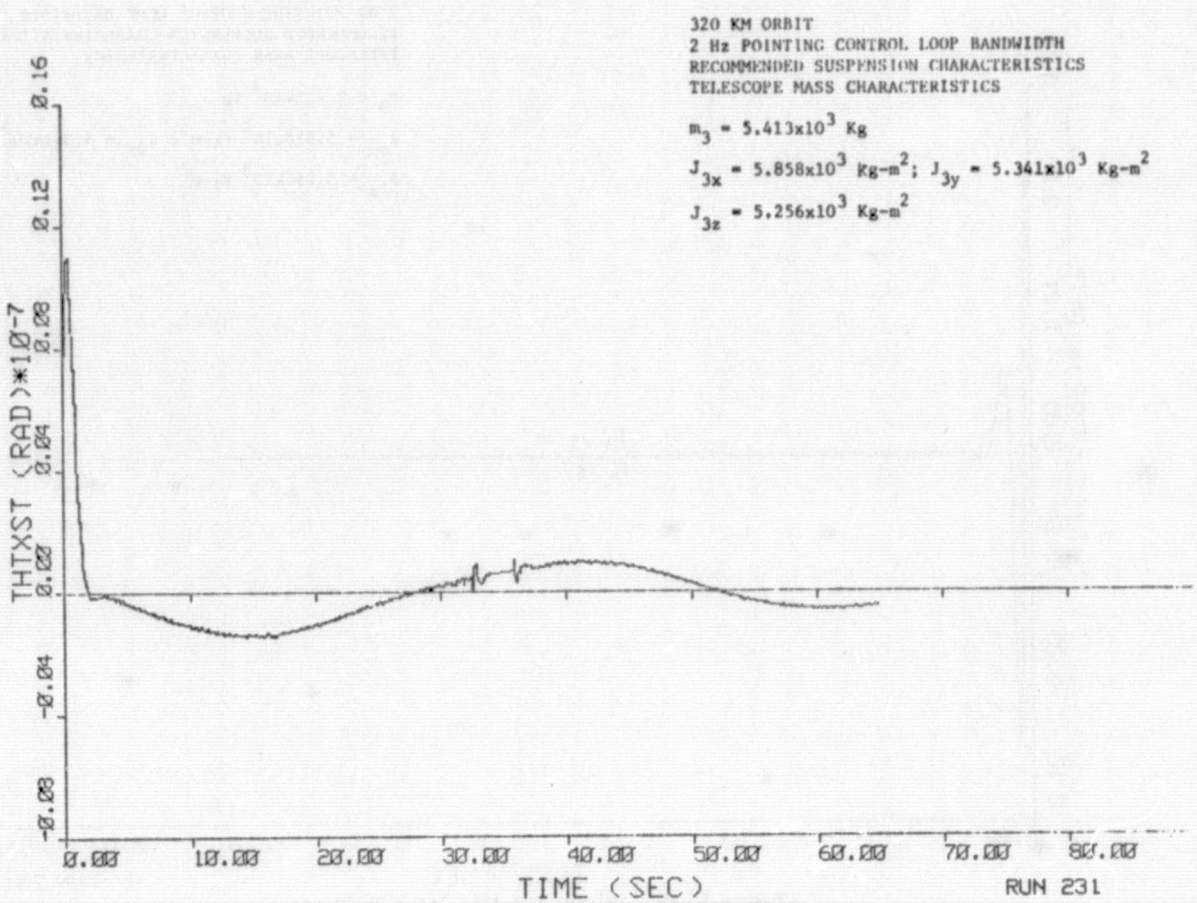


Figure 11-64. Telescope x-Axis Tracking Error

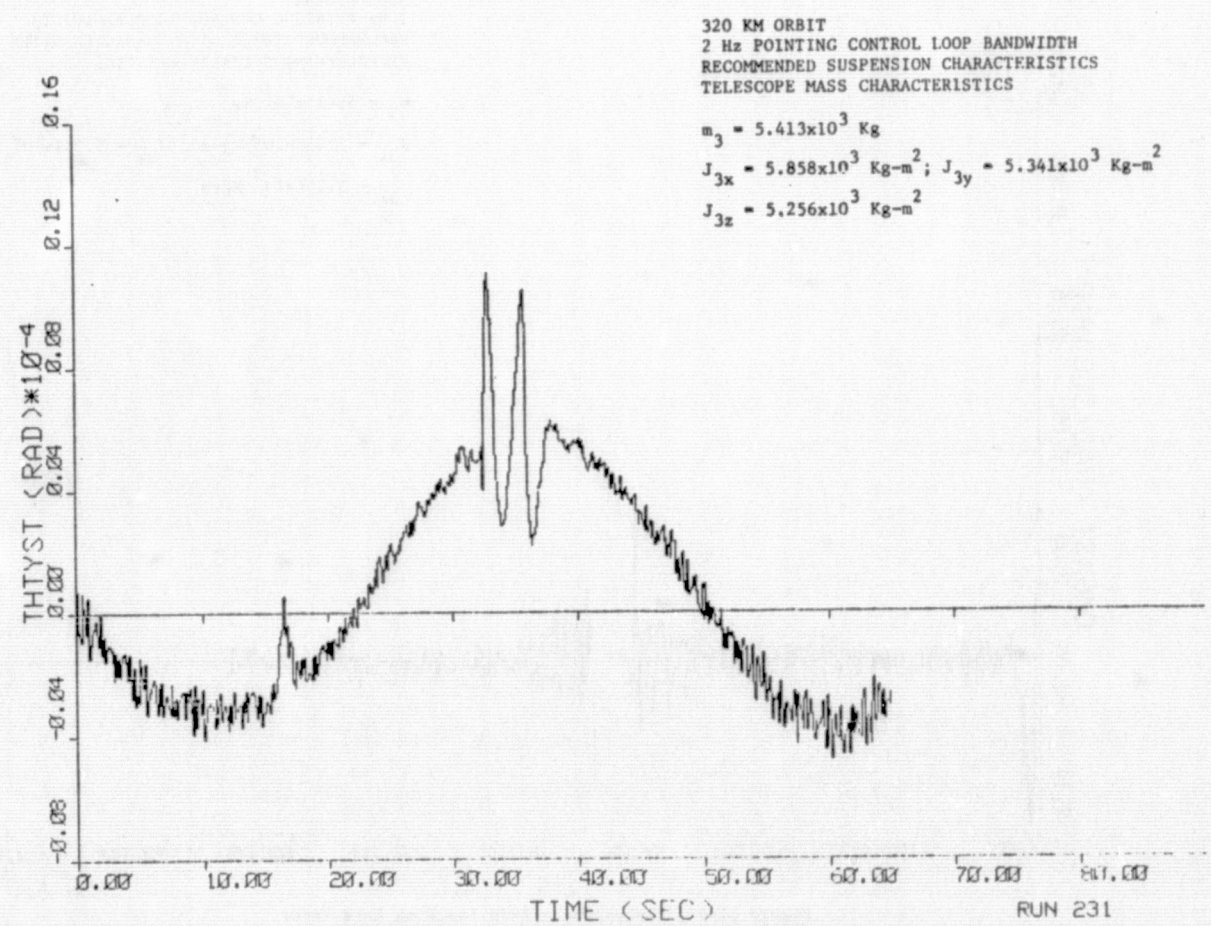


Figure 11-65. Telescope y-Axis Tracking Error

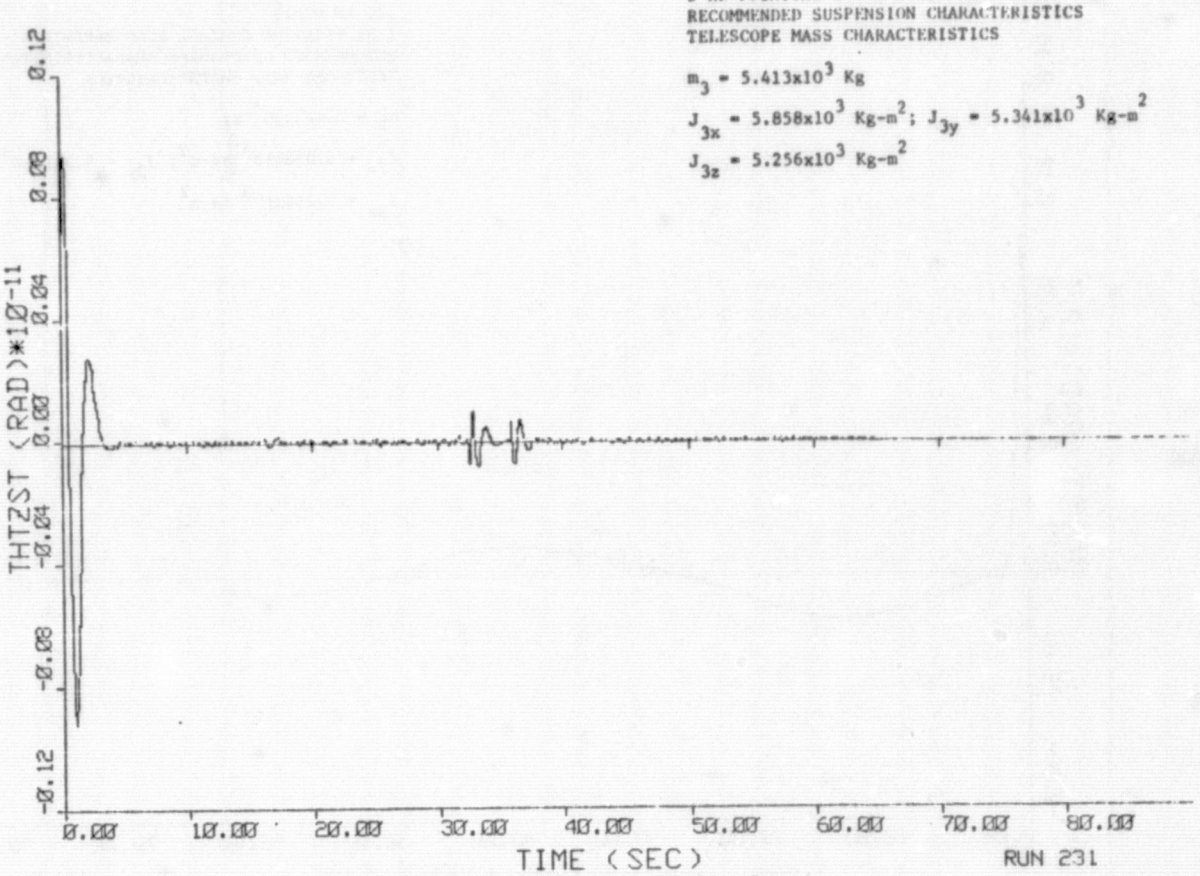


Figure 11-66. Telescope z-Axis Tracking Error

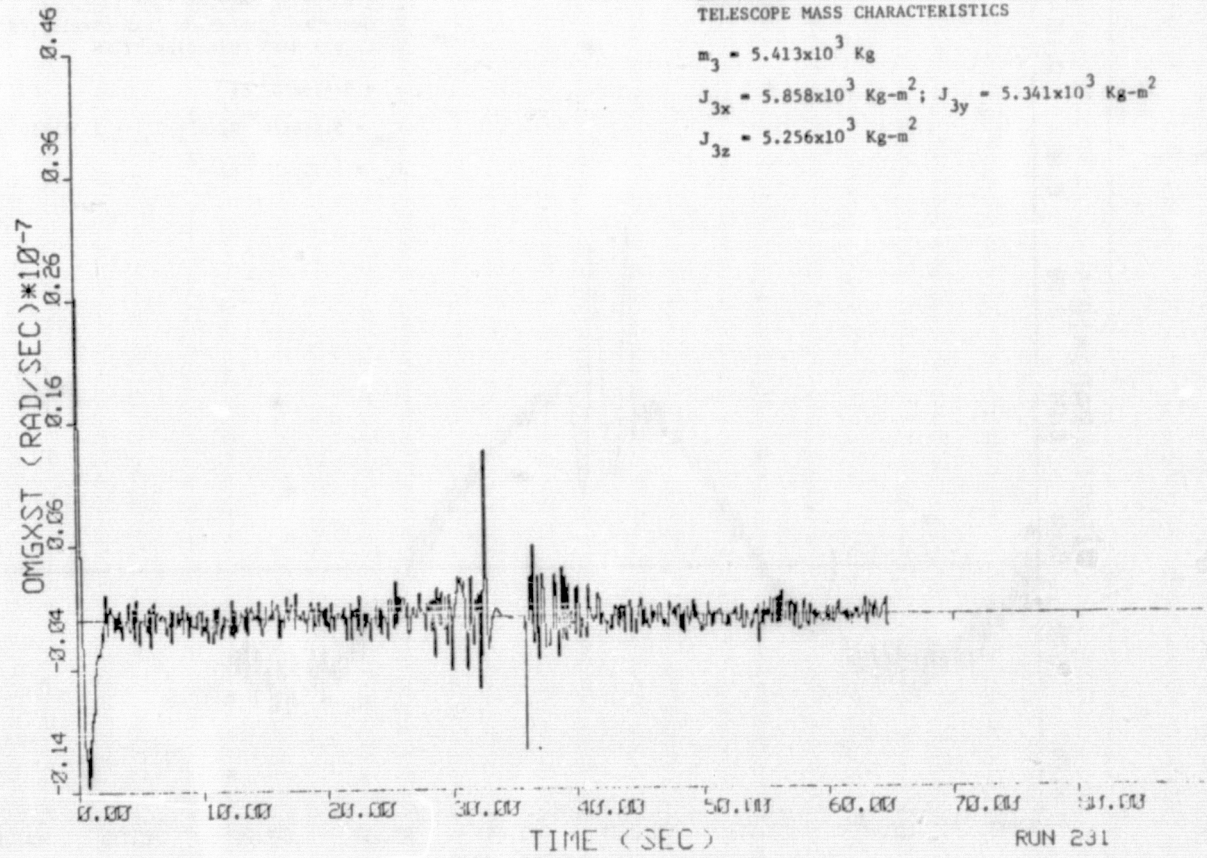


Figure 11-67. Telescope x-Axis Tracking Rate Error

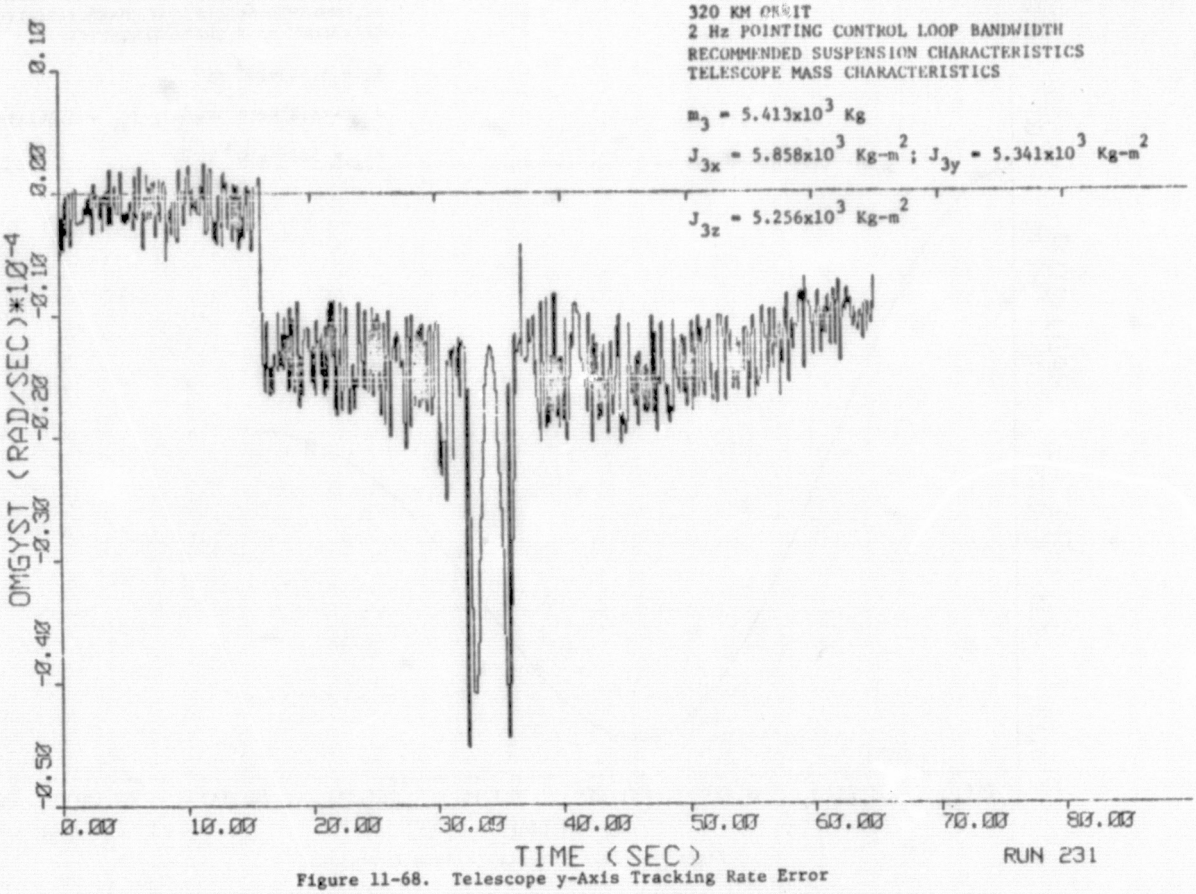


Figure 11-68. Telescope y-Axis Tracking Rate Error

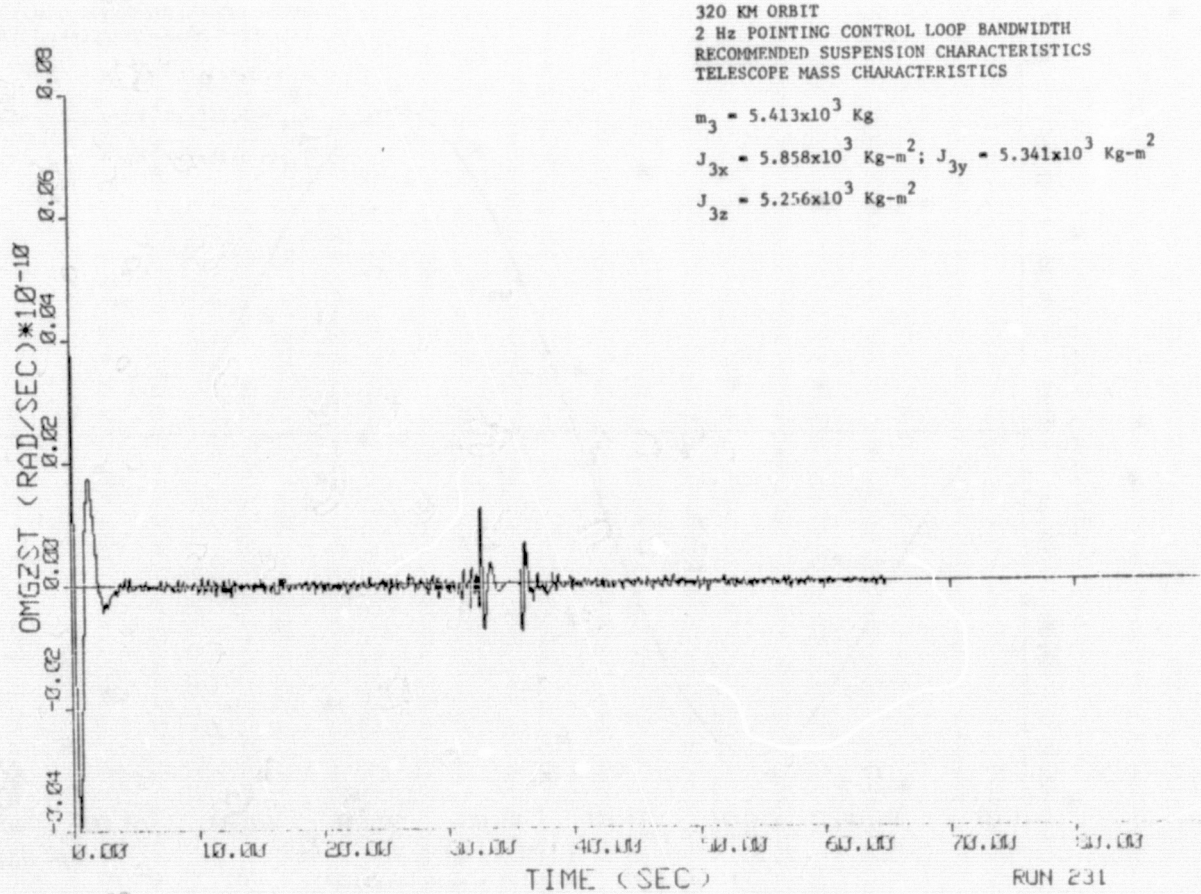


Figure 11-69. Telescope z-Axis Tracking Rate Error

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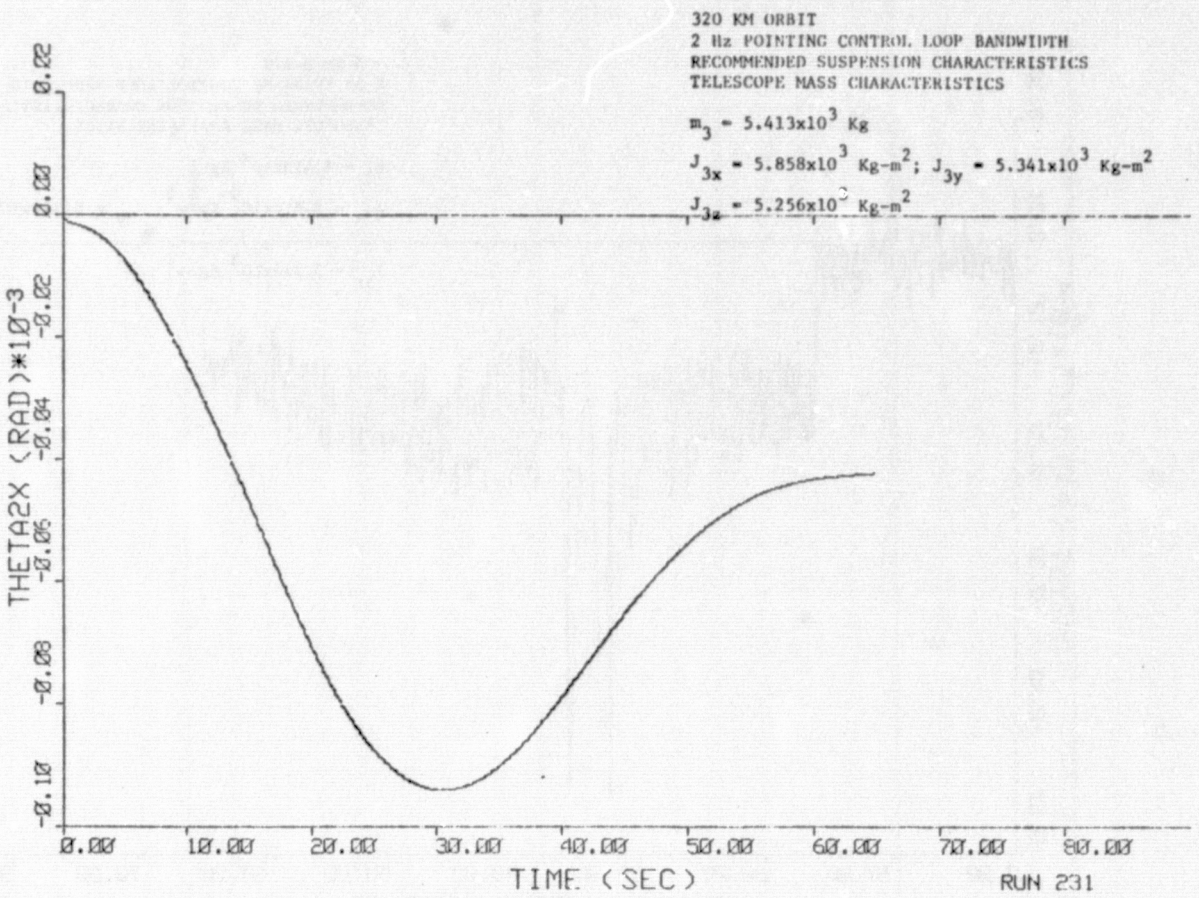


Figure 11-70. Pedestal x-Axis Rotation

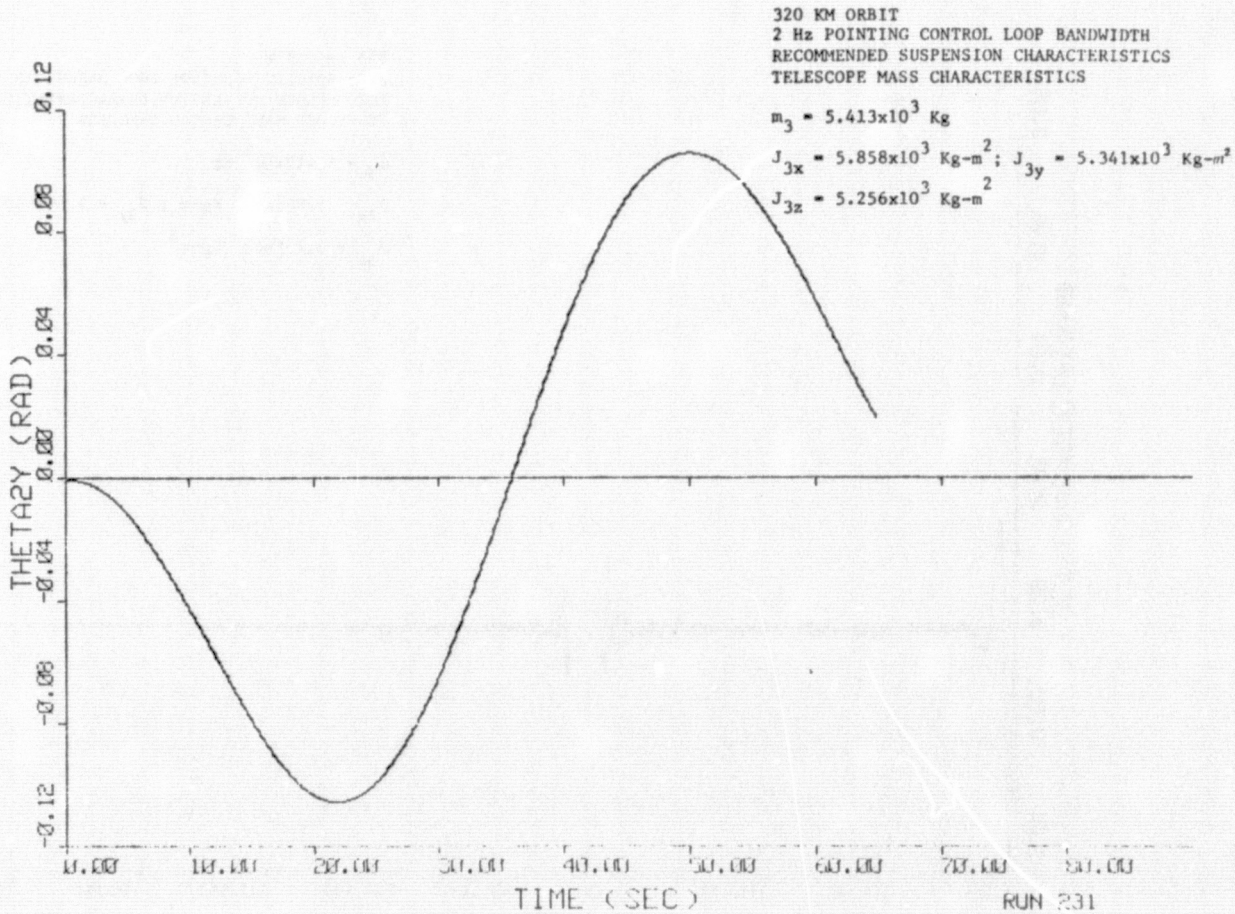


Figure 11-71. Pedestal y-Axis Rotation

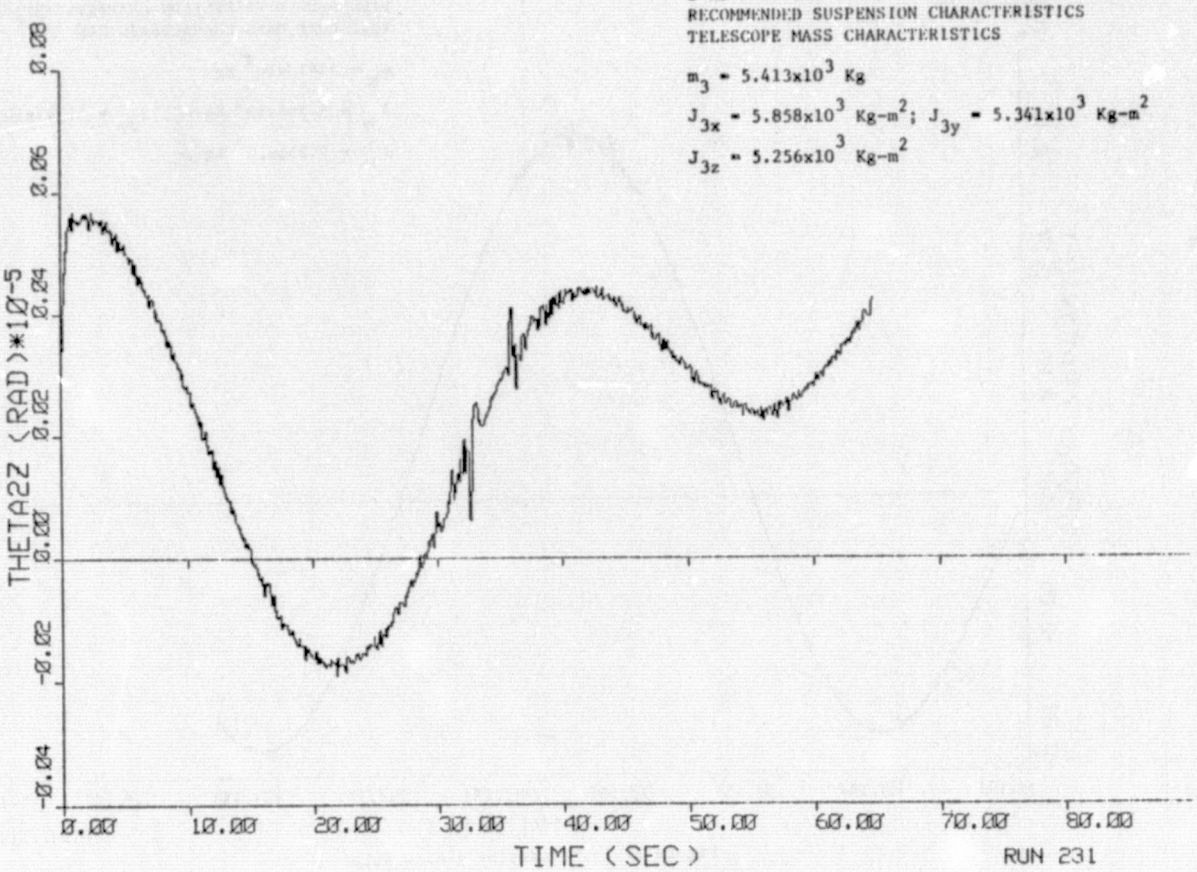


Figure 11-72. Pedestal z-Axis Rotation

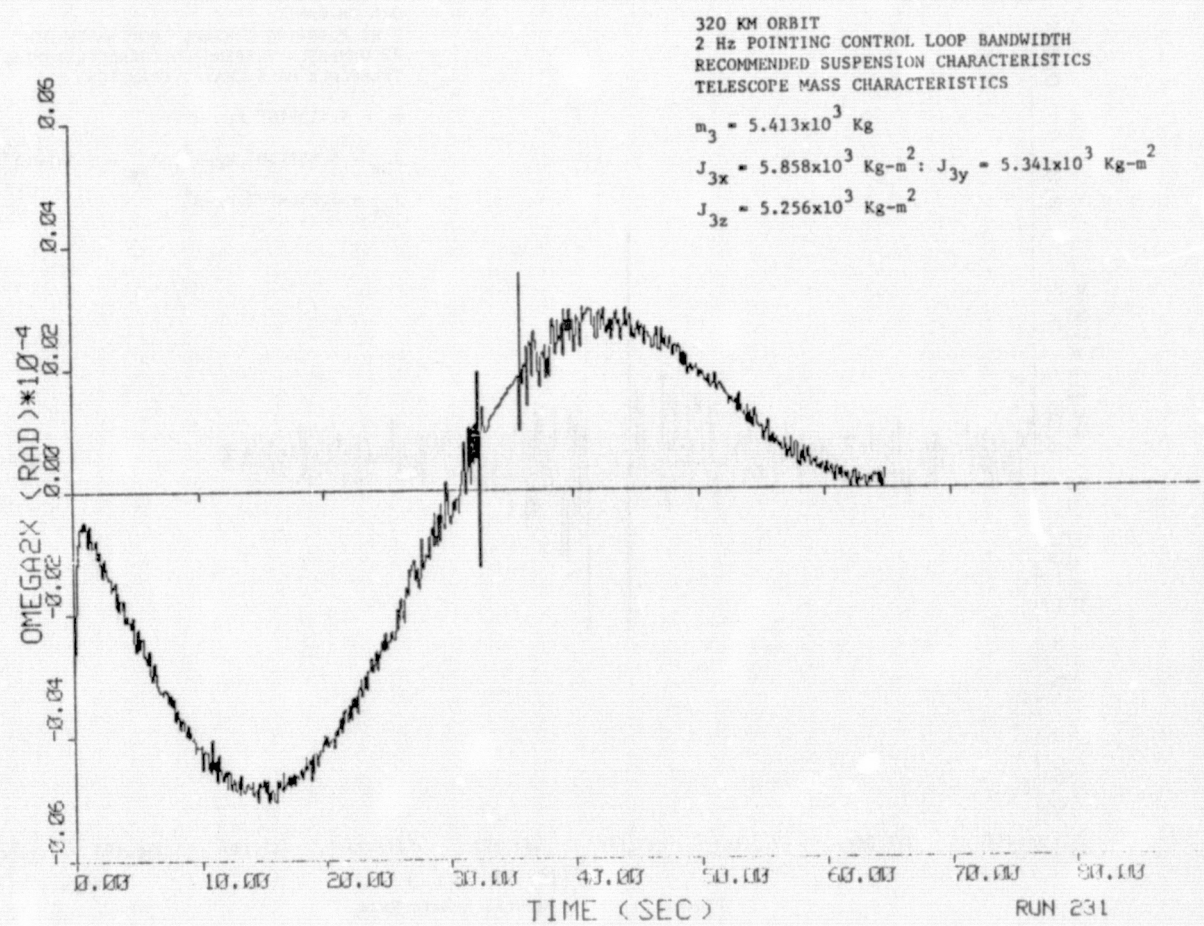


Figure 11-73. Pedestal x-Axis Rate

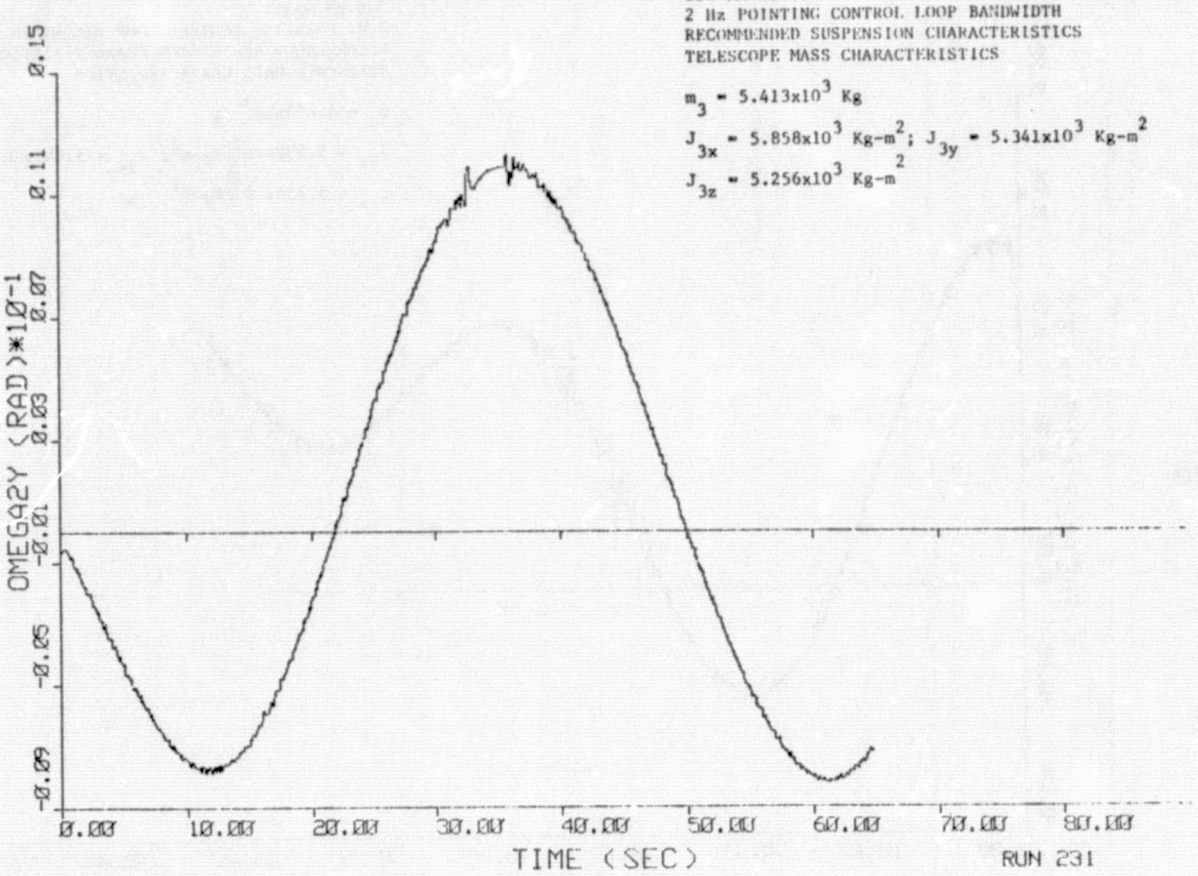


Figure 11-74. Pedestal y-Axis Rate

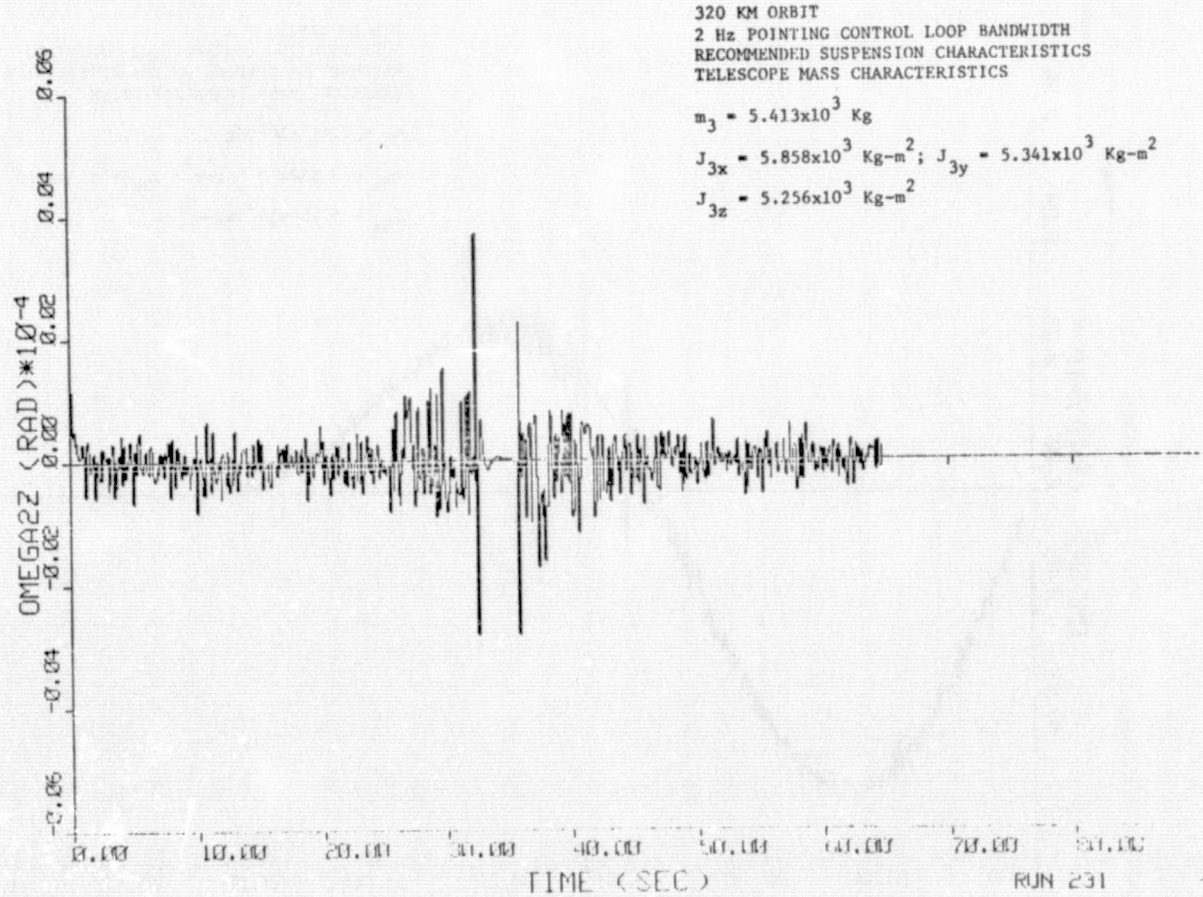


Figure 11-75. Pedestal z-Axis Rate

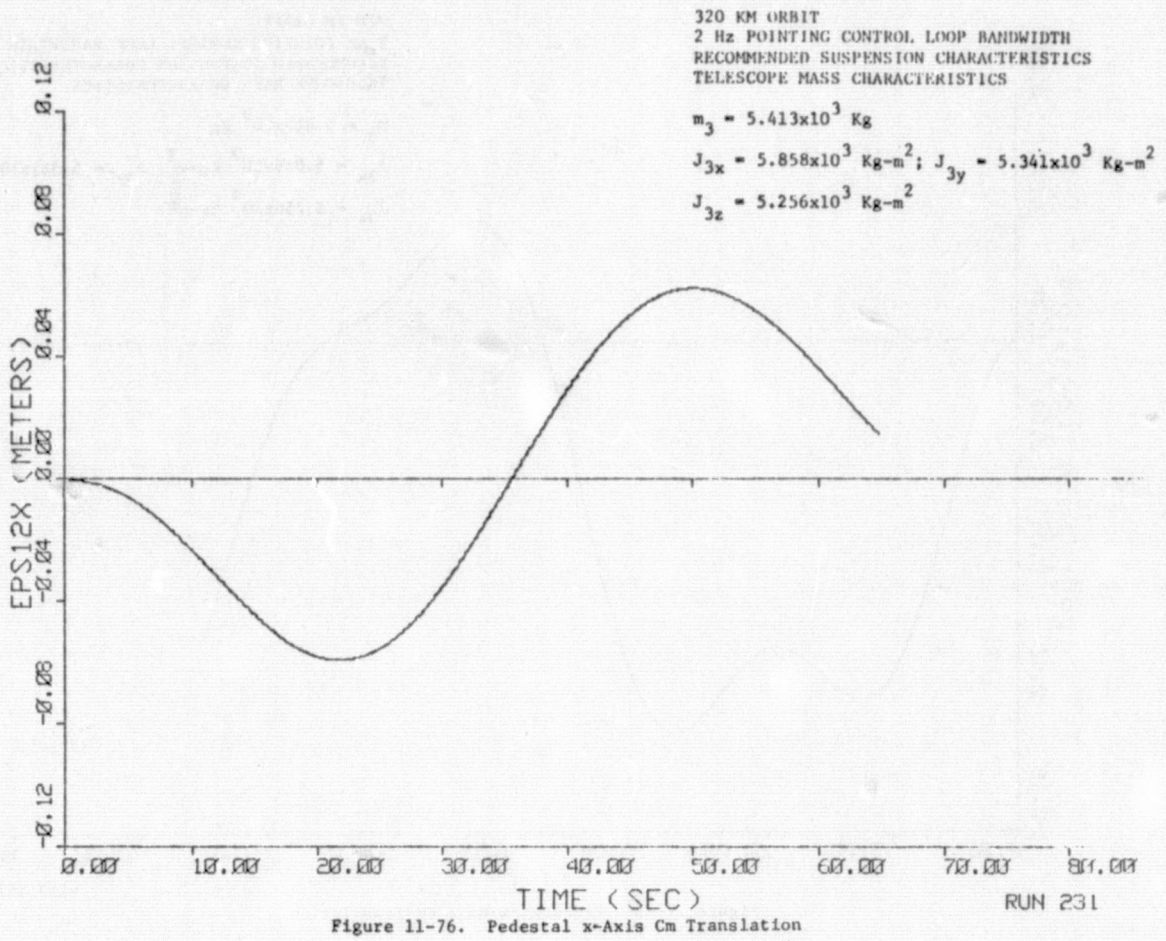


Figure 11-76. Pedestal x-Axis Cm Translation

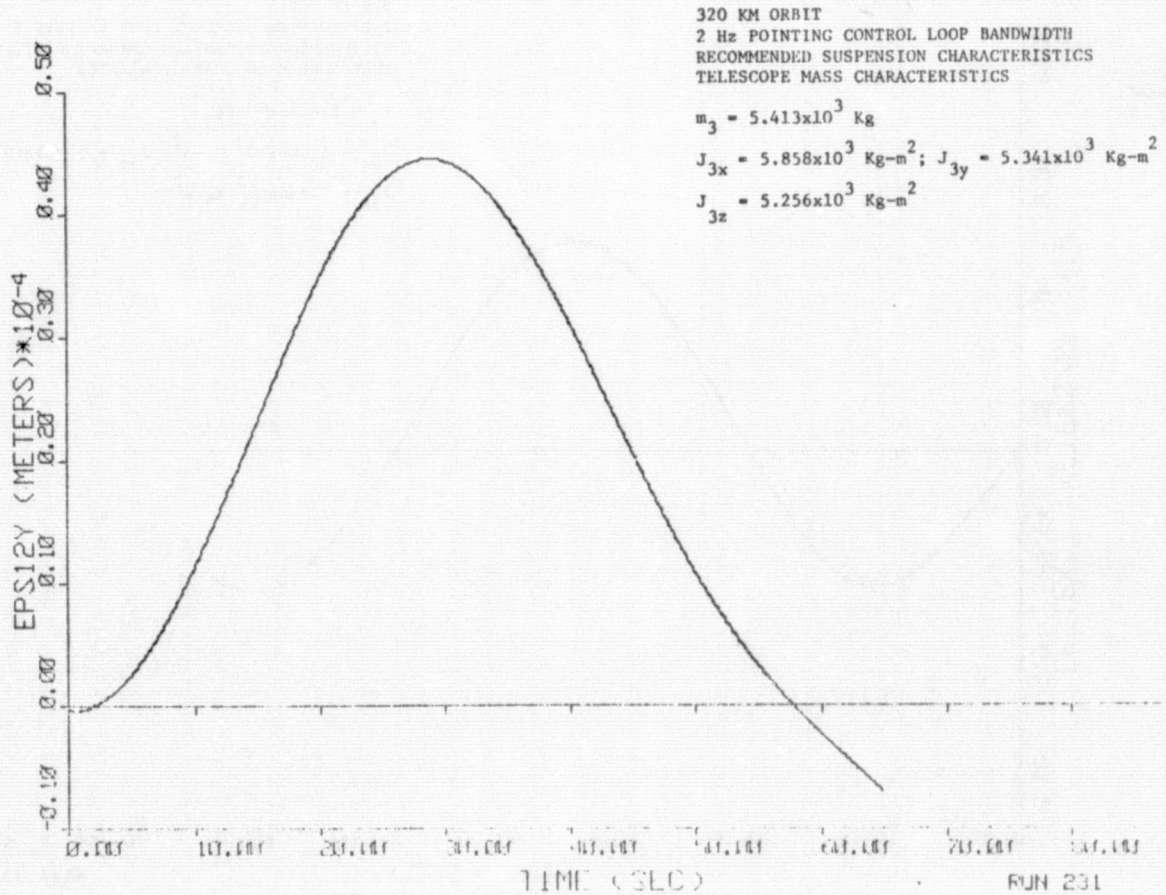


Figure 11-77. Pedestal y-Axis CM Translation

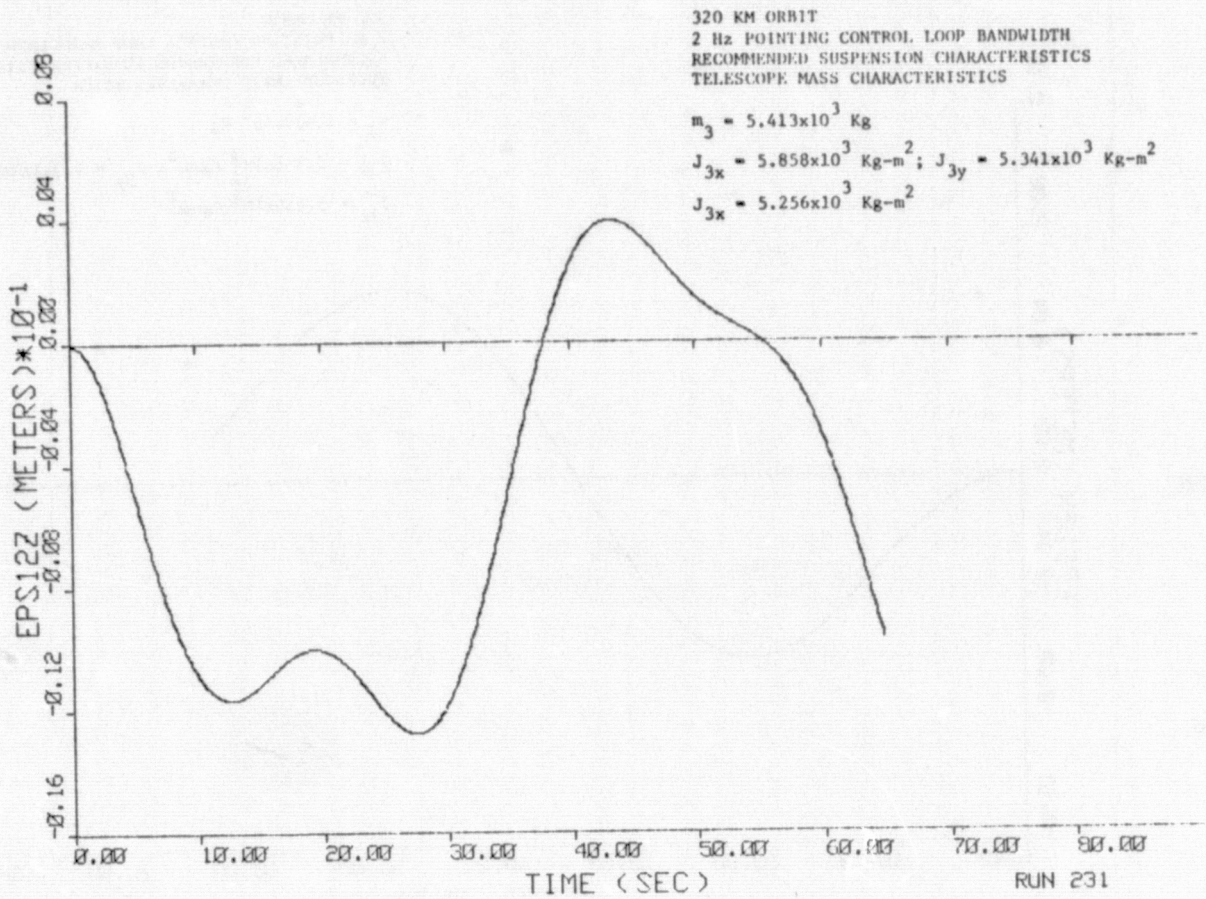


Figure 11-78. Pedestal z-Axis CM Translation

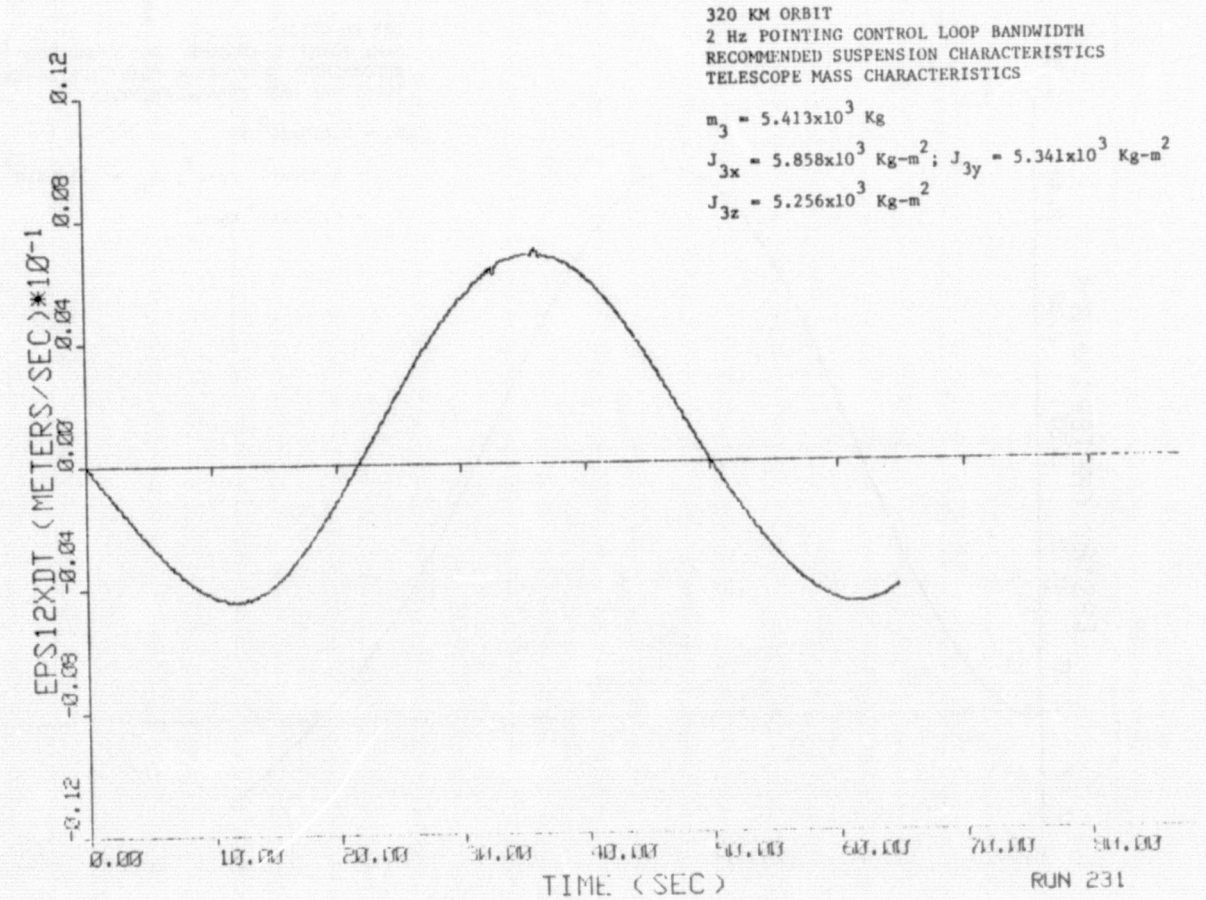


Figure 11-79. Pedestal x-Axis CM Velocity

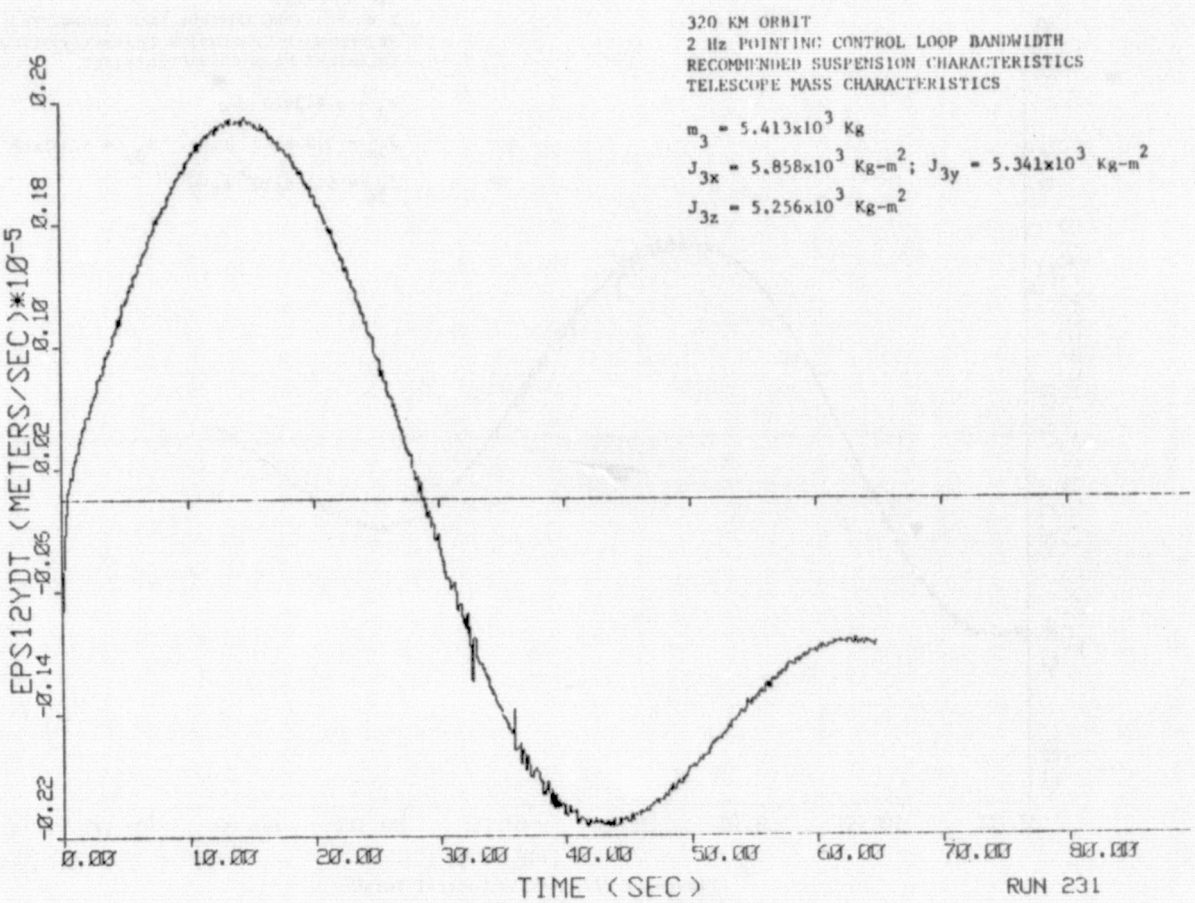


Figure 11-80. Pedestal y-Axis CM Velocity

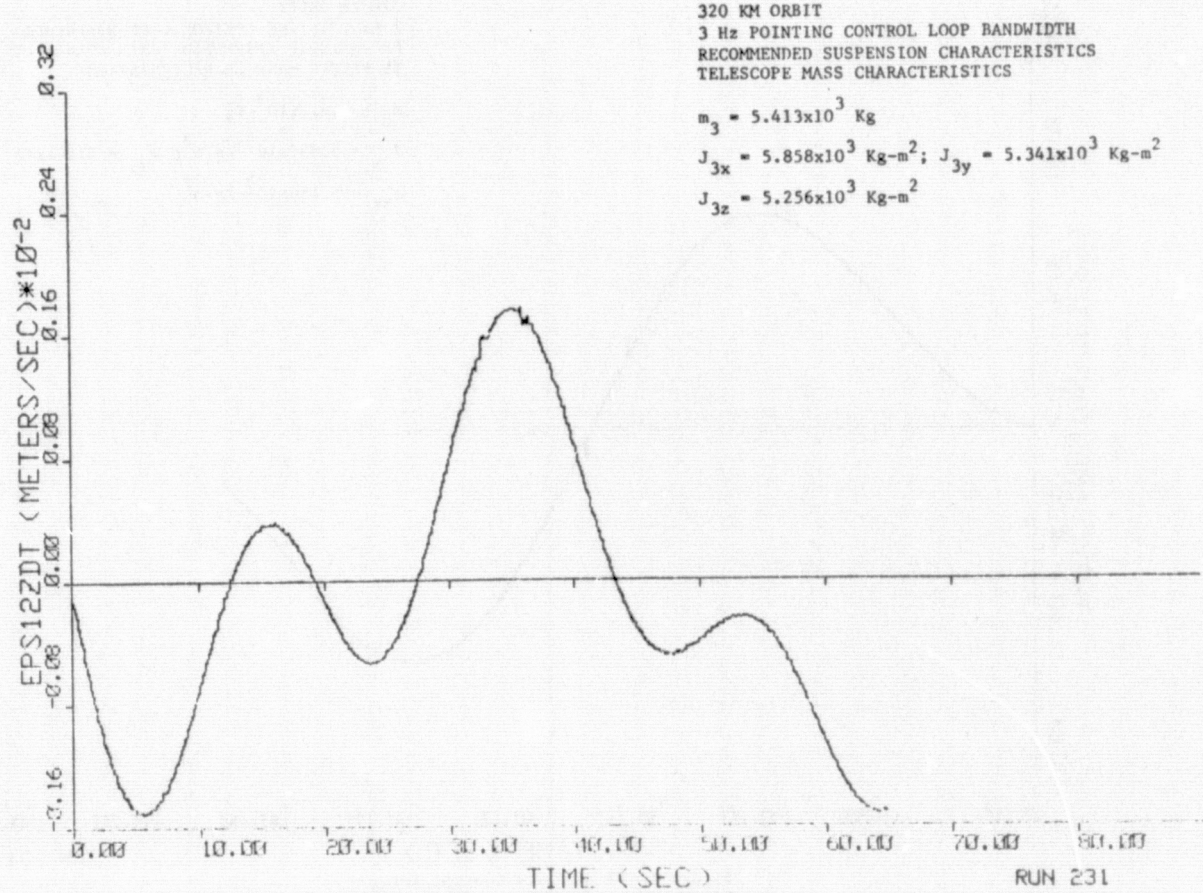


Figure 11-81. Pedestal z-Axis CM Velocity

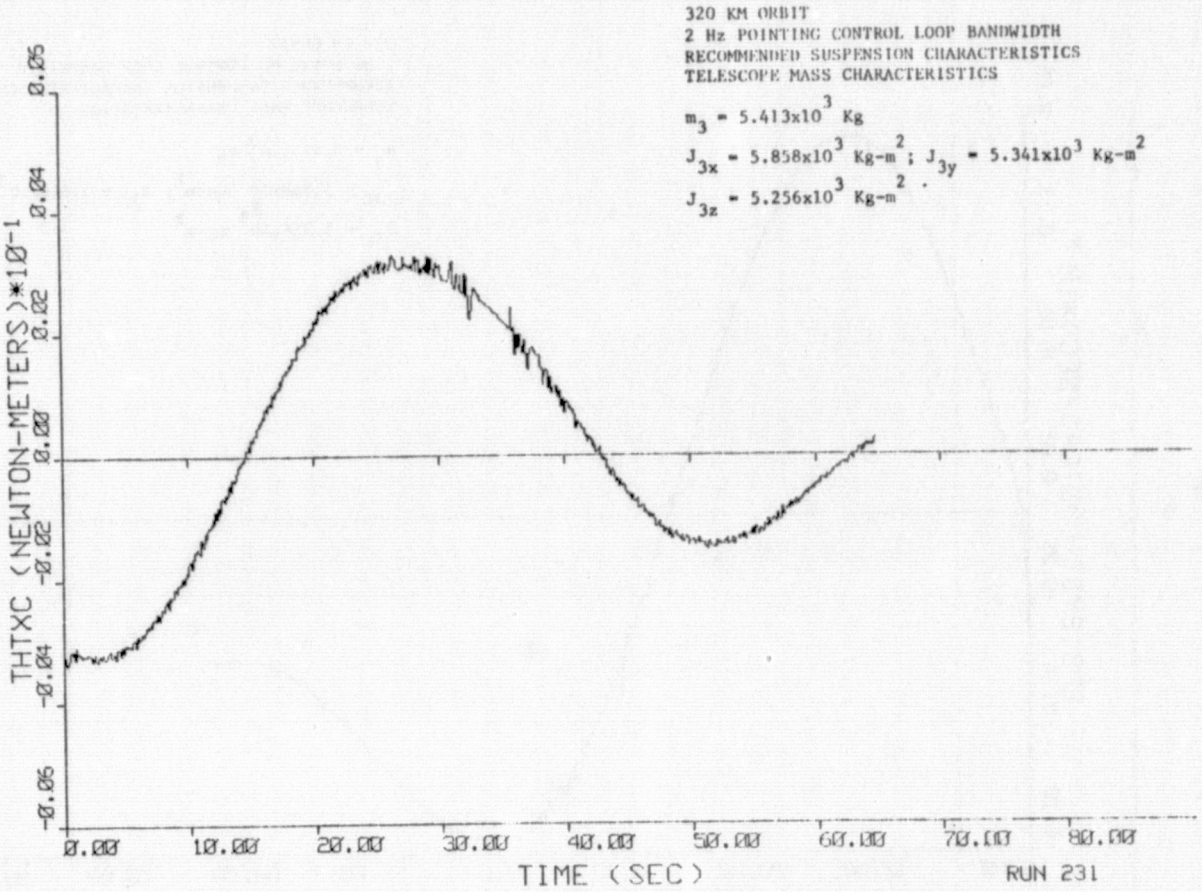


Figure 11-82. x-Axis Control Torque

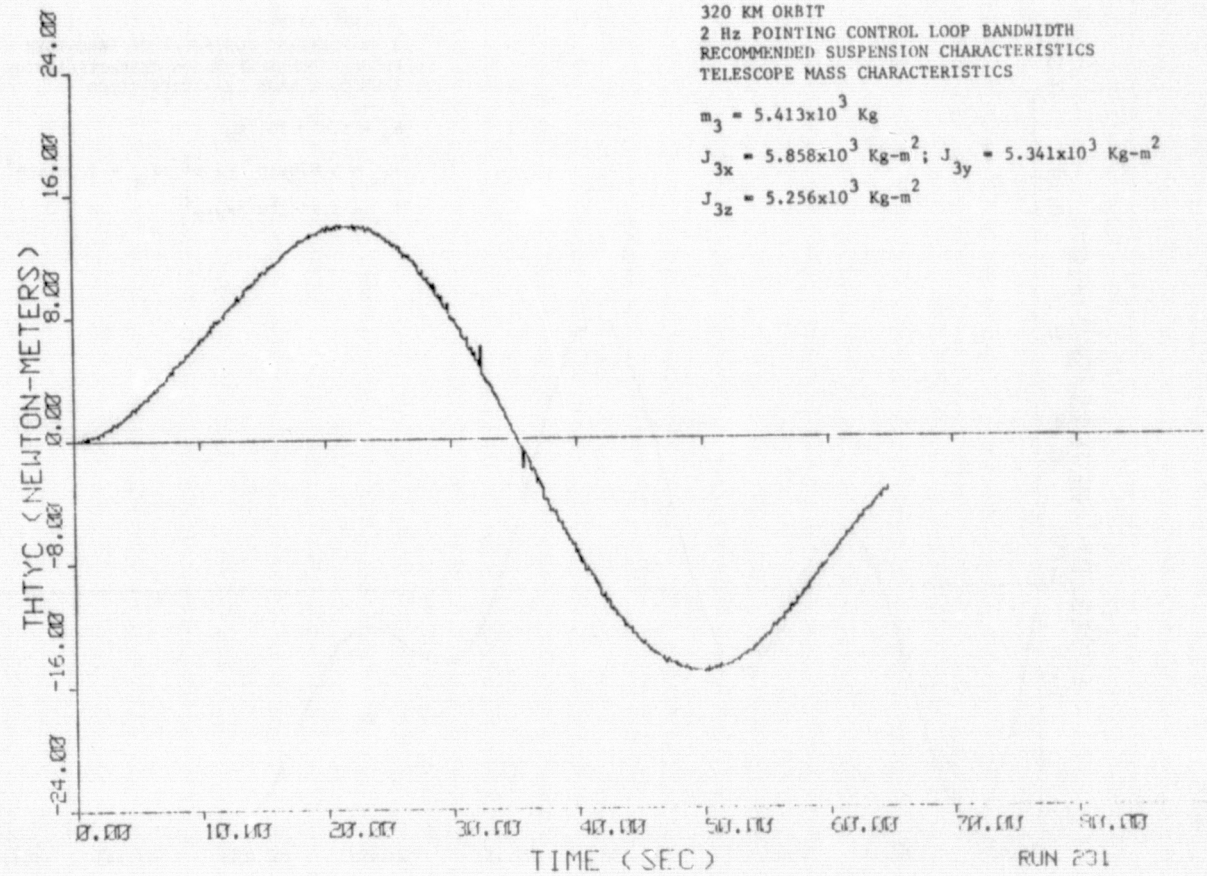


Figure 11-83. y-Axis Control Torque

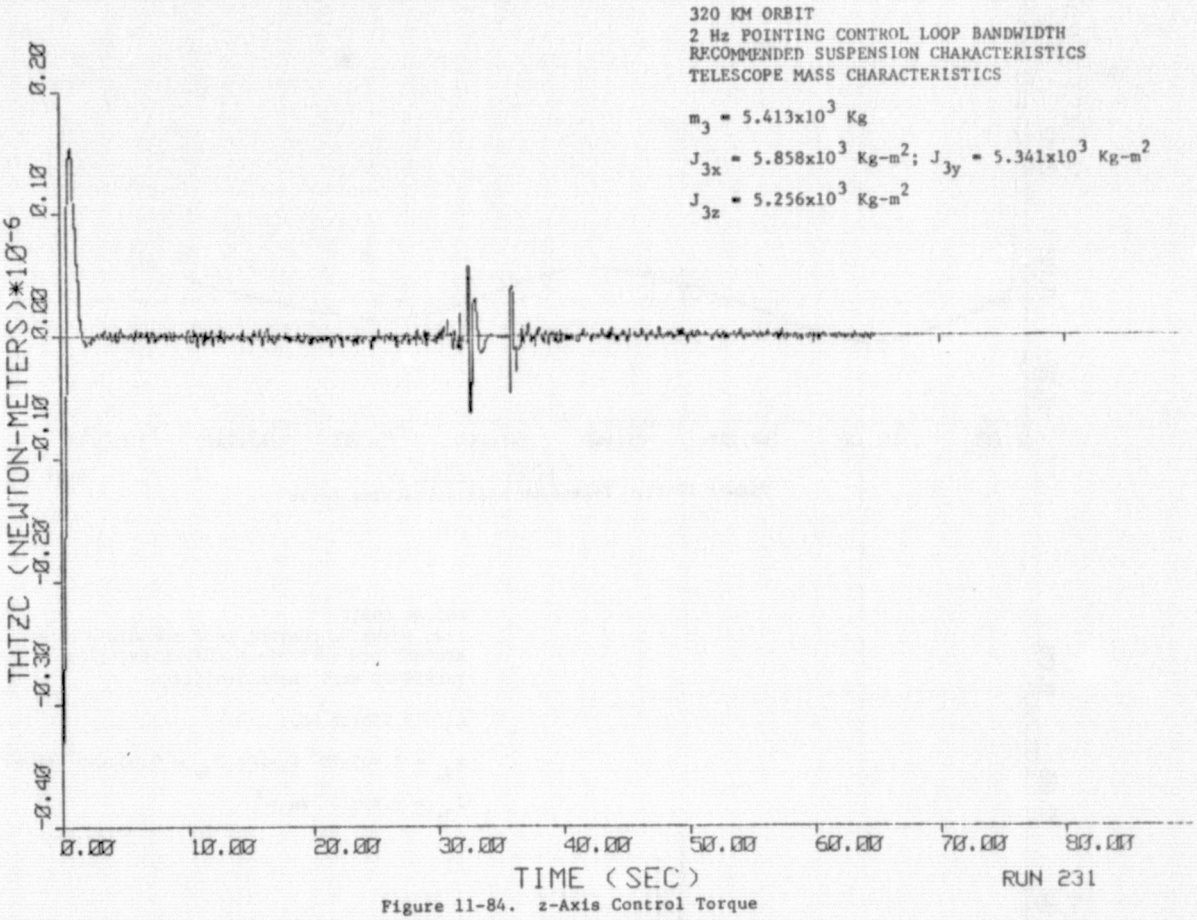


Figure 11-84. z-Axis Control Torque

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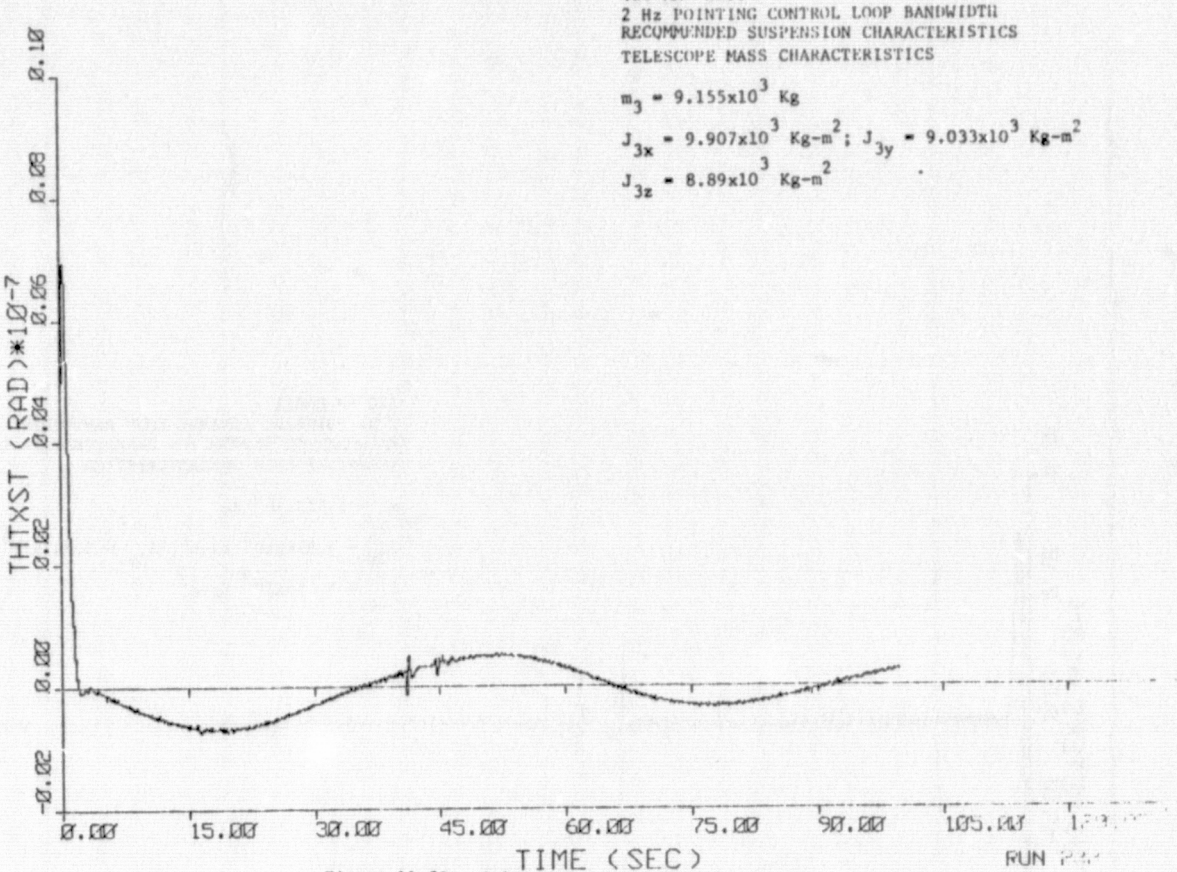


Figure 11-85. Telescope x-Axis Tracking Error

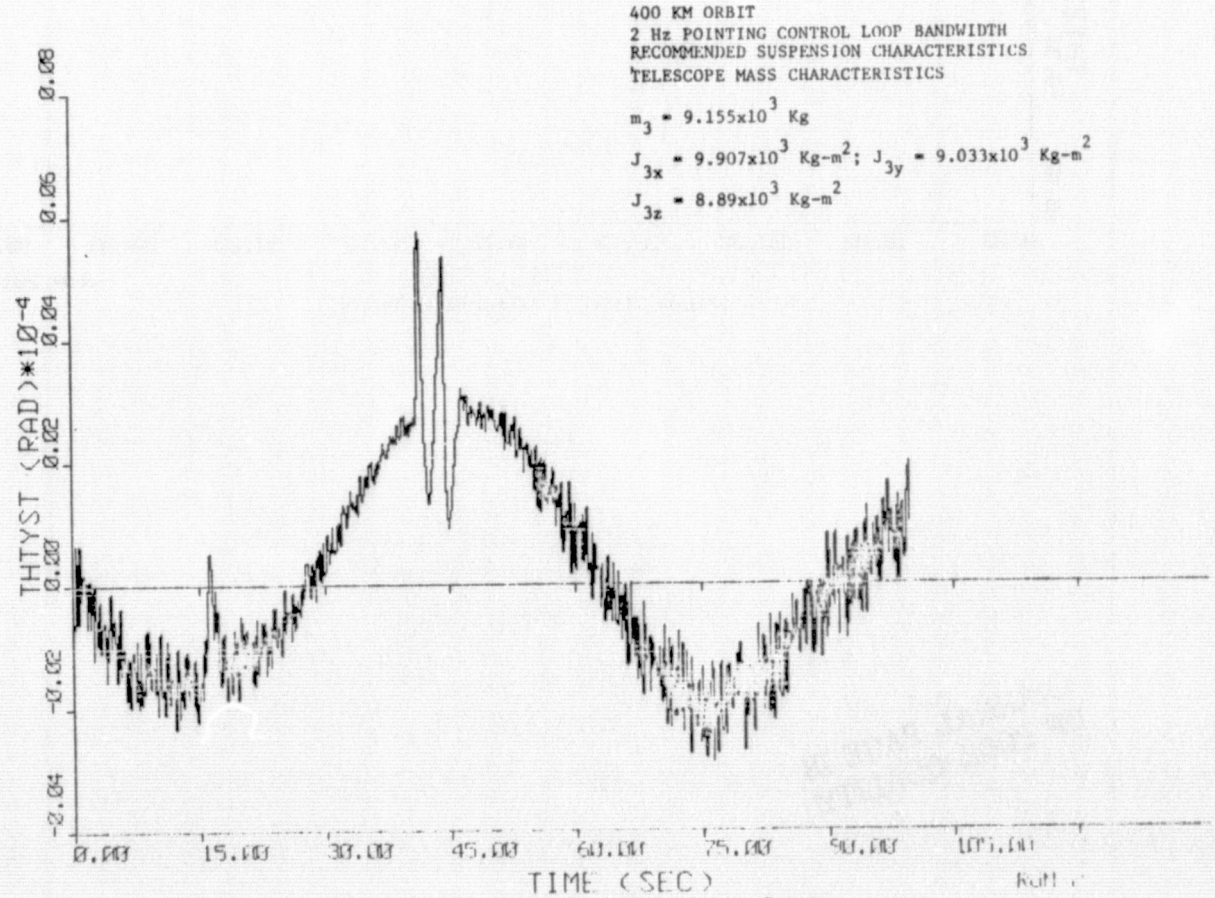


Figure 11-86. Telescope y-Axis Tracking Error

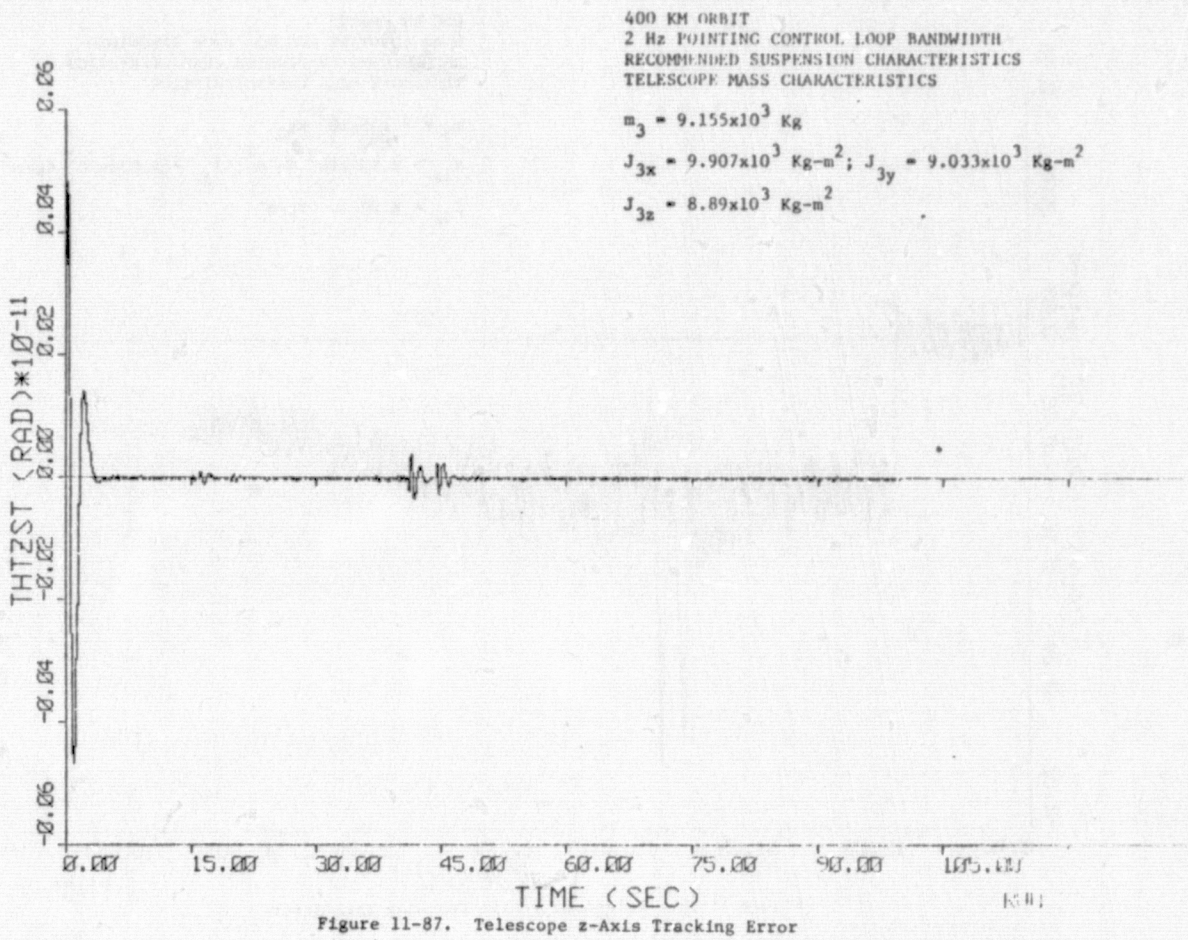


Figure 11-87. Telescope z-Axis Tracking Error

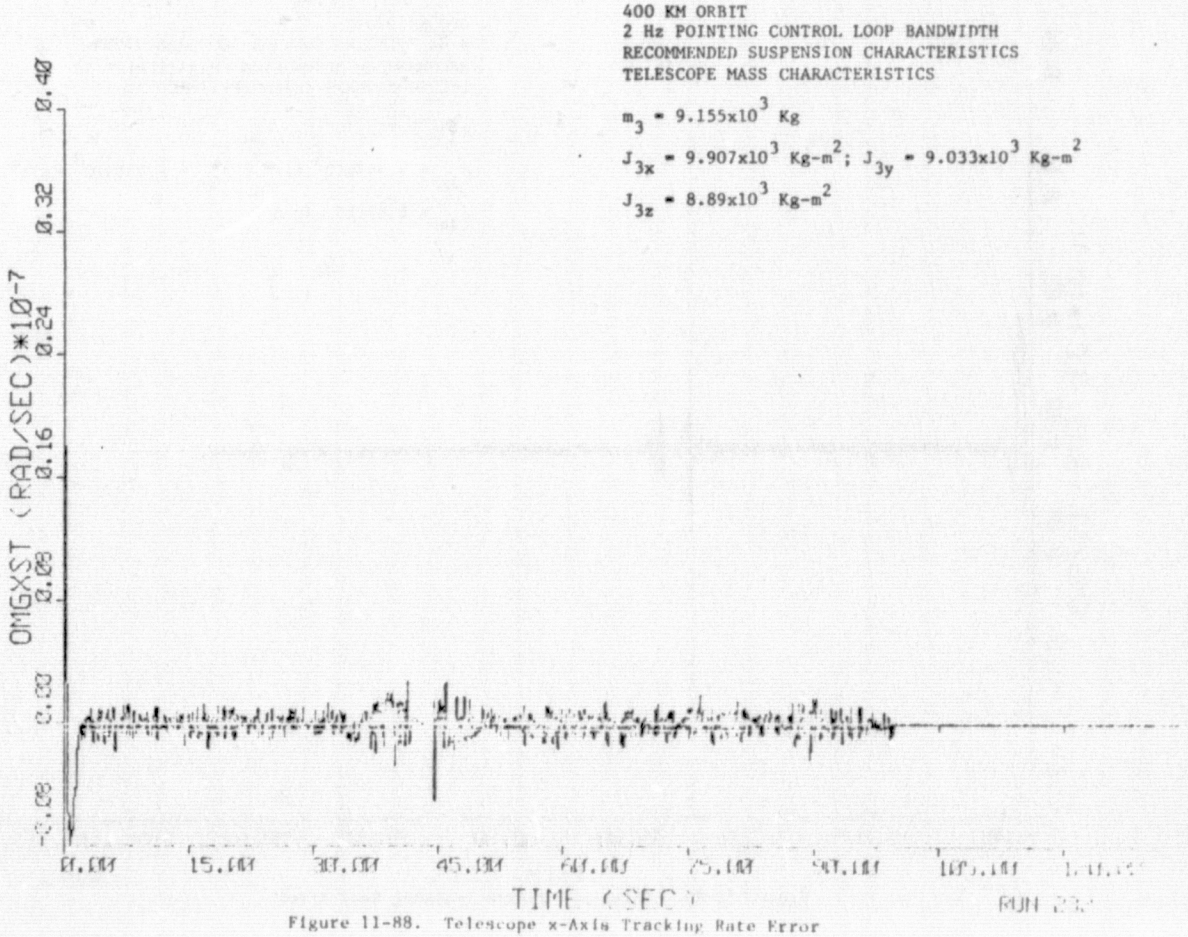


Figure 11-88. Telescope x-Axis Tracking Rate Error

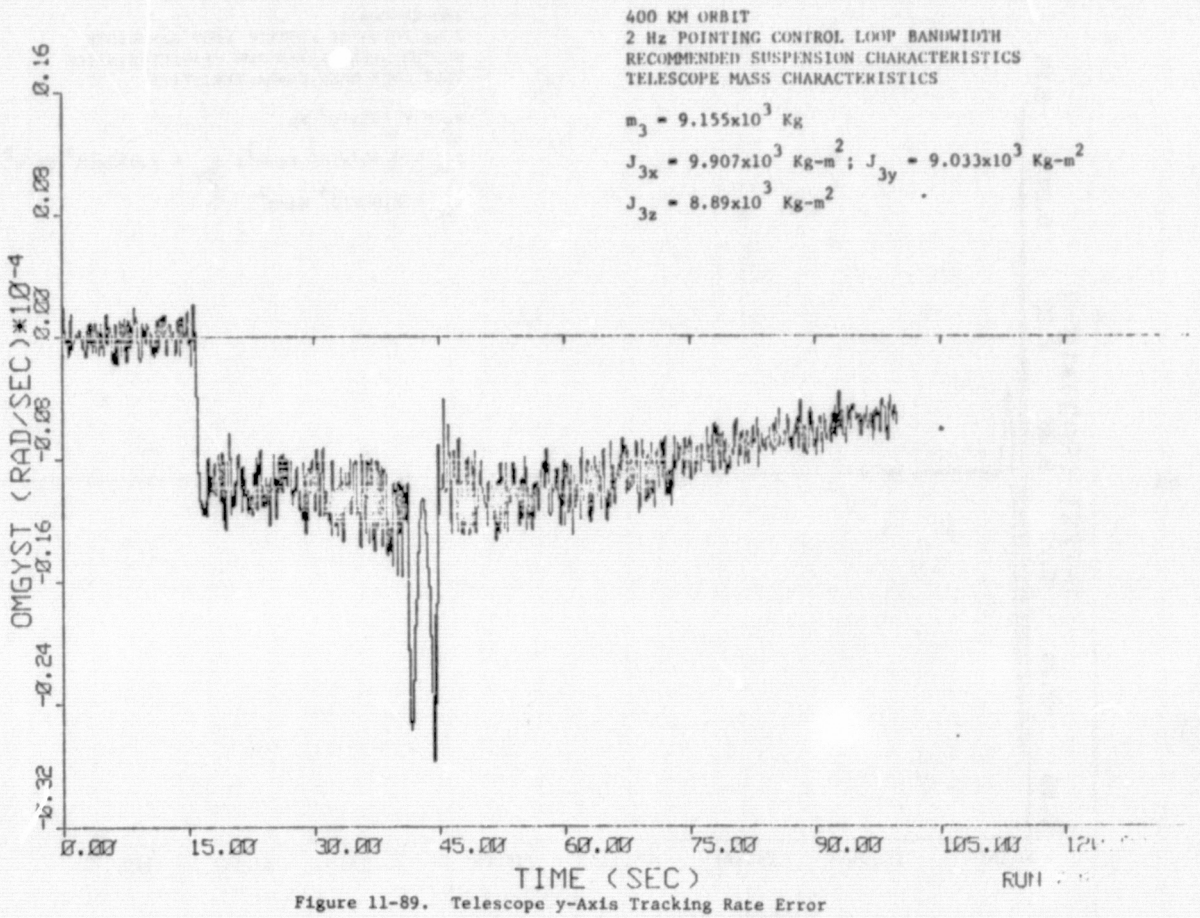


Figure 11-89. Telescope y-Axis Tracking Rate Error

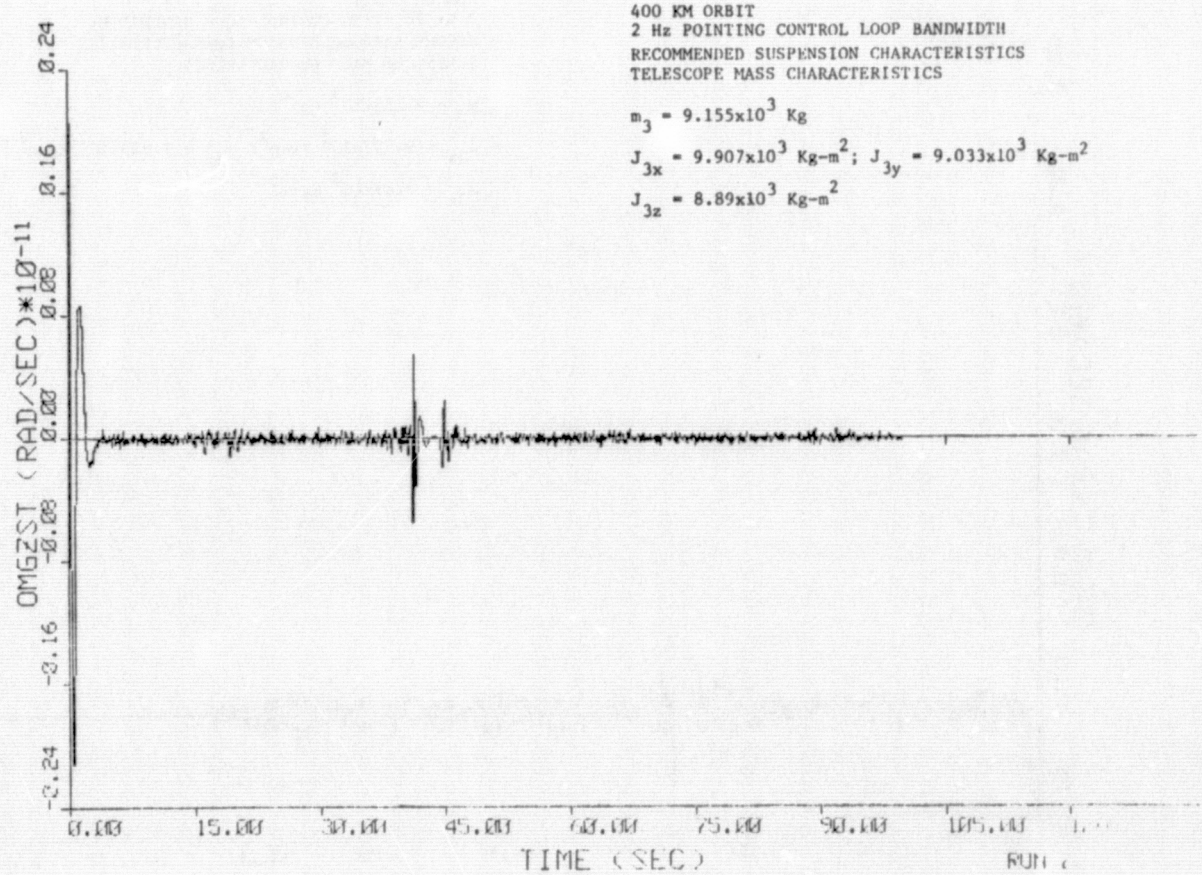


Figure 11-90. Telescope z-Axis Tracking Rate Error

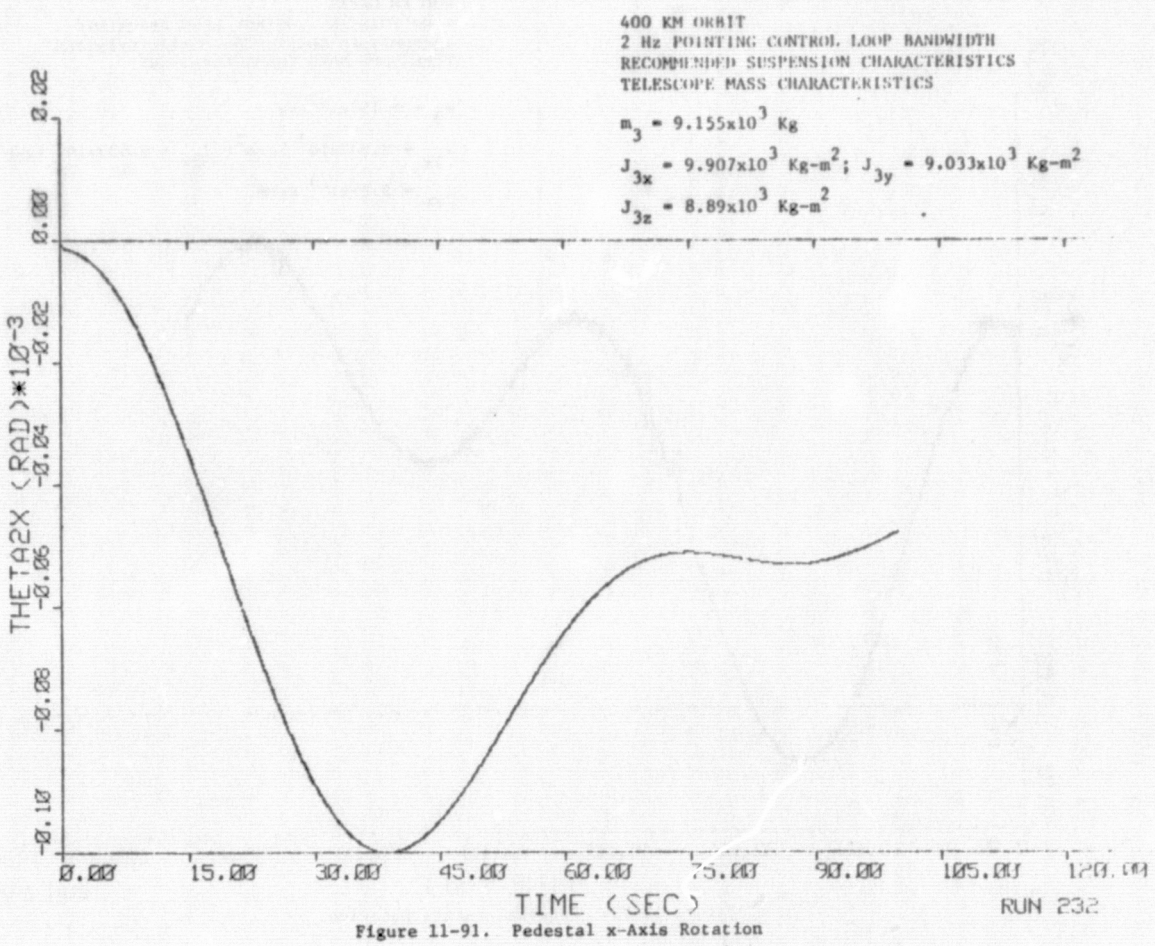


Figure 11-91. Pedestal x-Axis Rotation

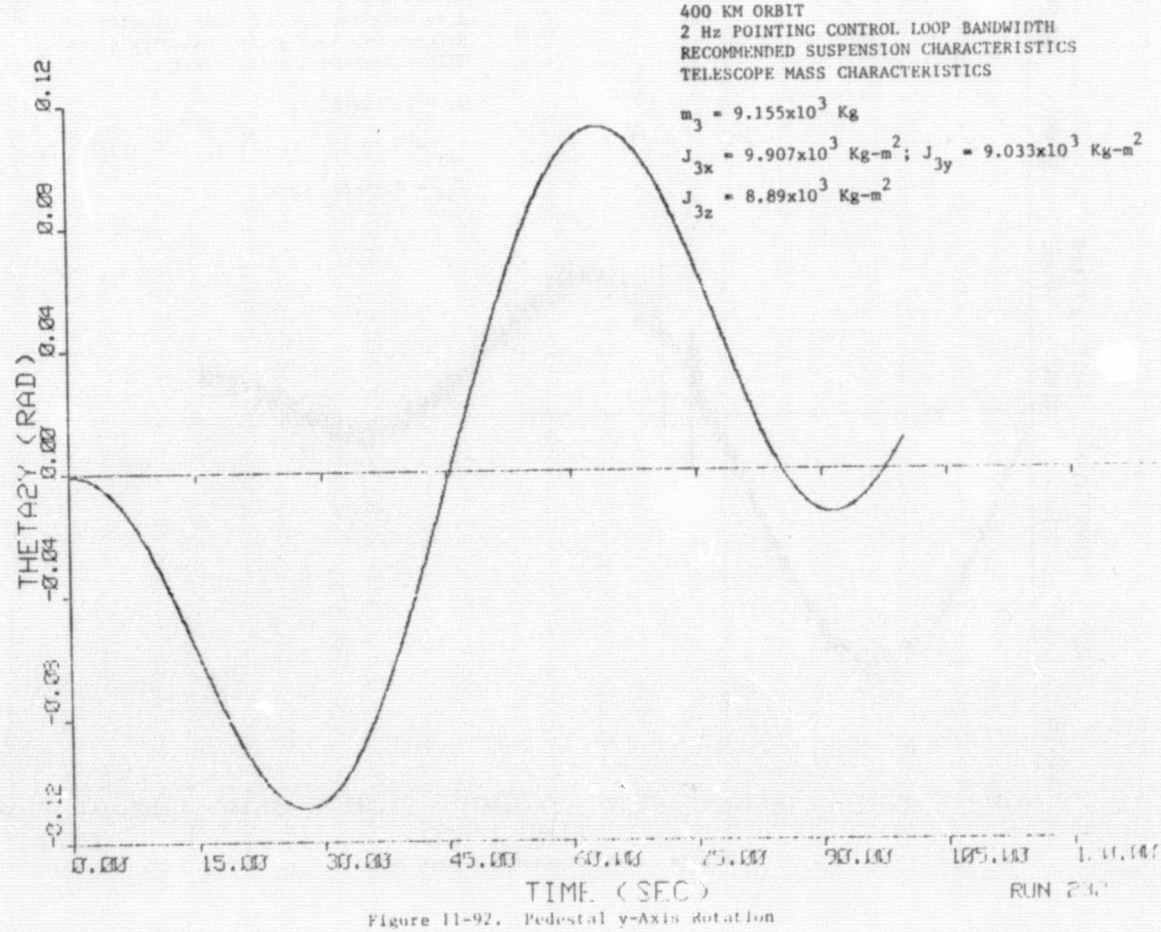


Figure 11-92. Pedestal y-Axis Rotation

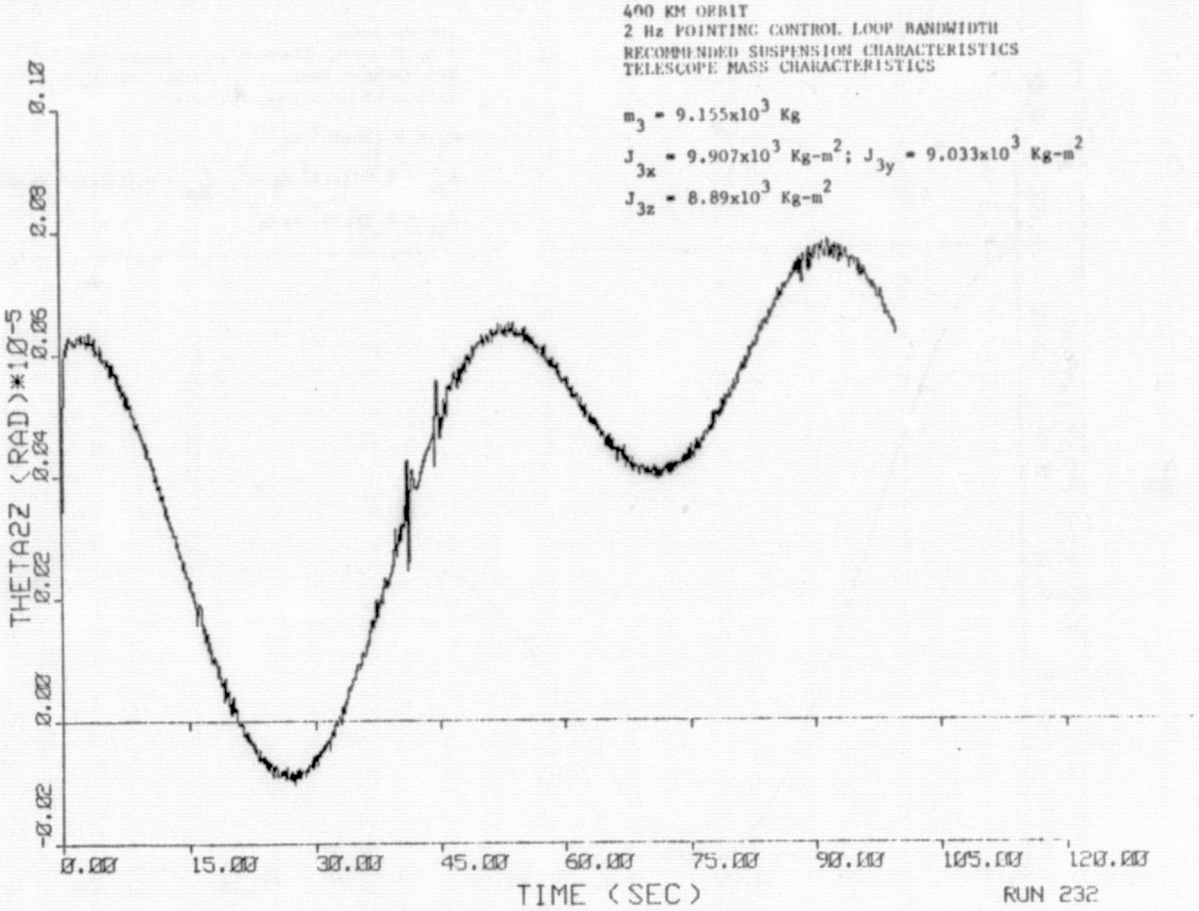


Figure 11-93. Pedestal z-Axis Rotation

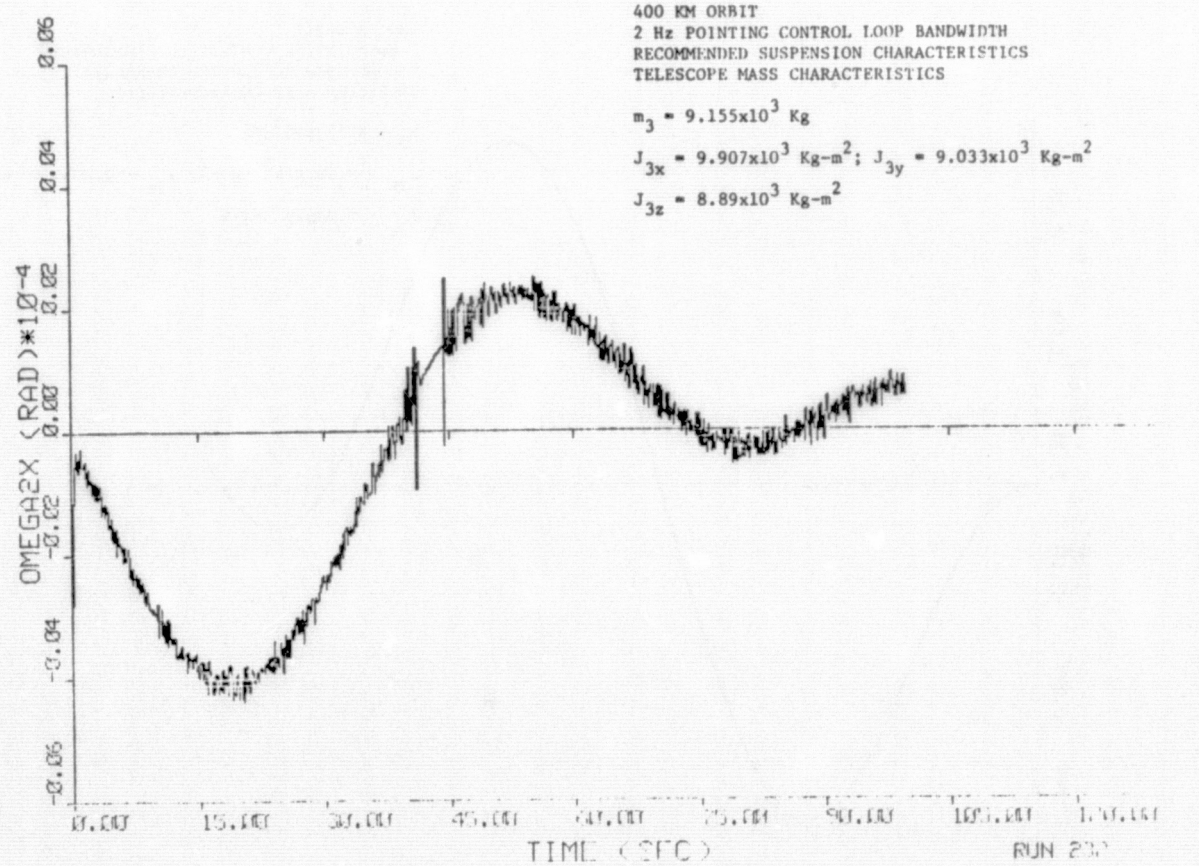


Figure 11-94. Pedestal x-Axis Rate

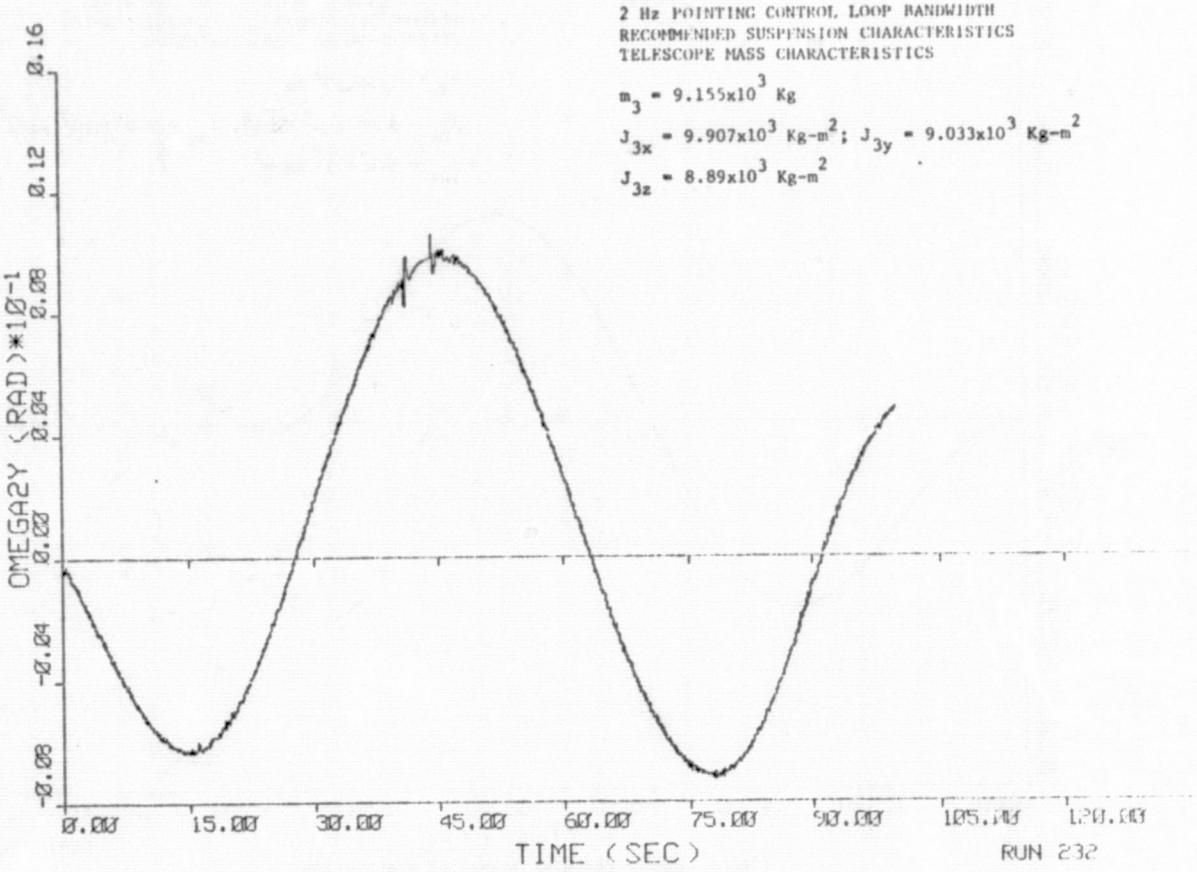


Figure 11-95. Pedestal y-Axis Rate

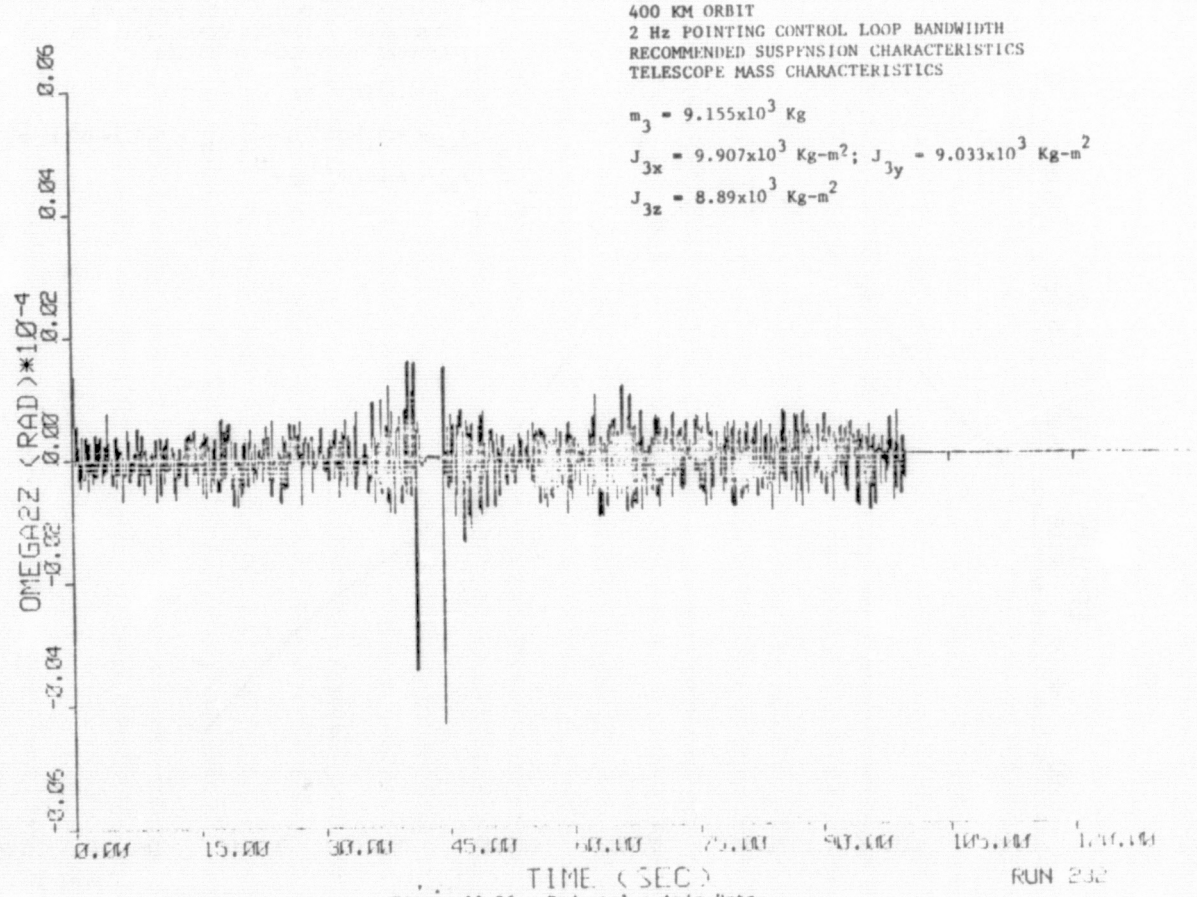


Figure 11-96. Pedestal z-Axis Rate

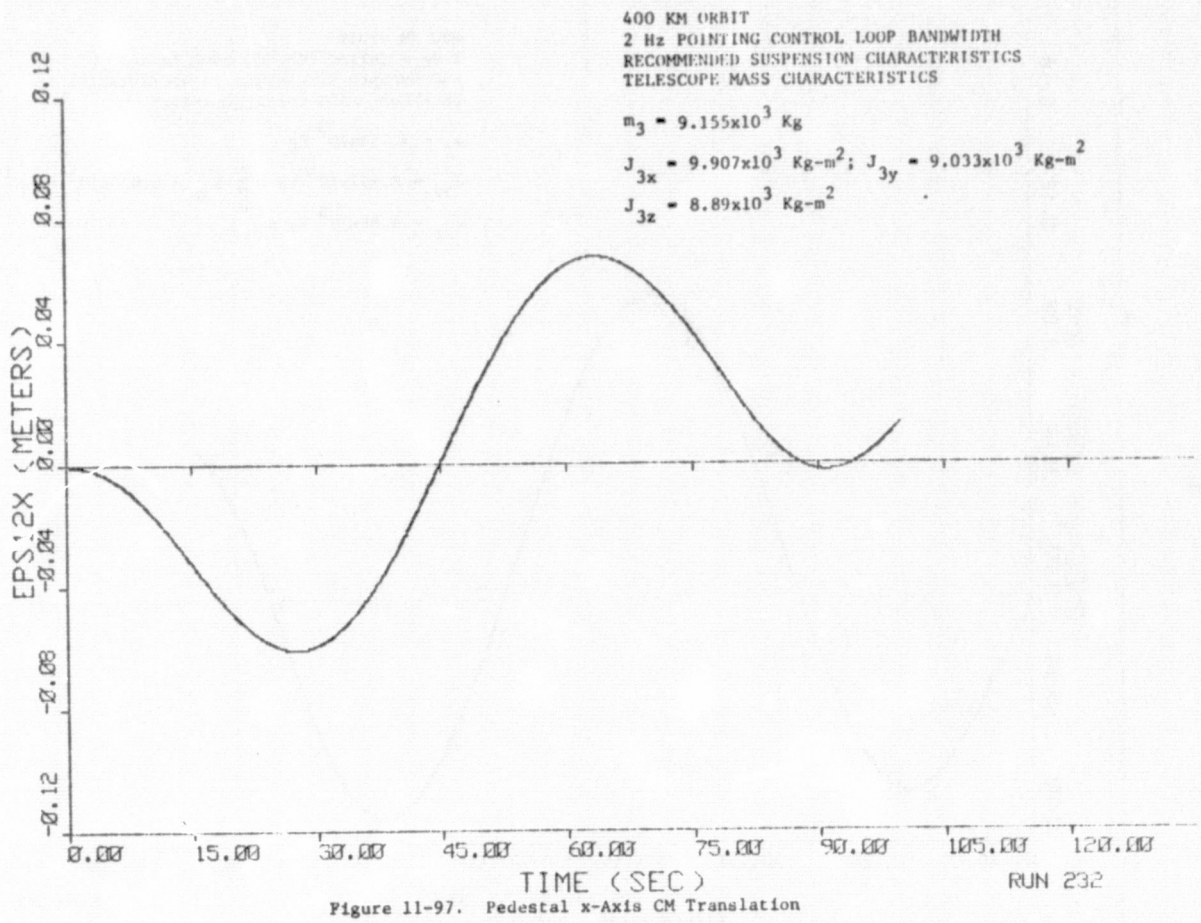


Figure 11-97. Pedestal x-Axis CM Translation

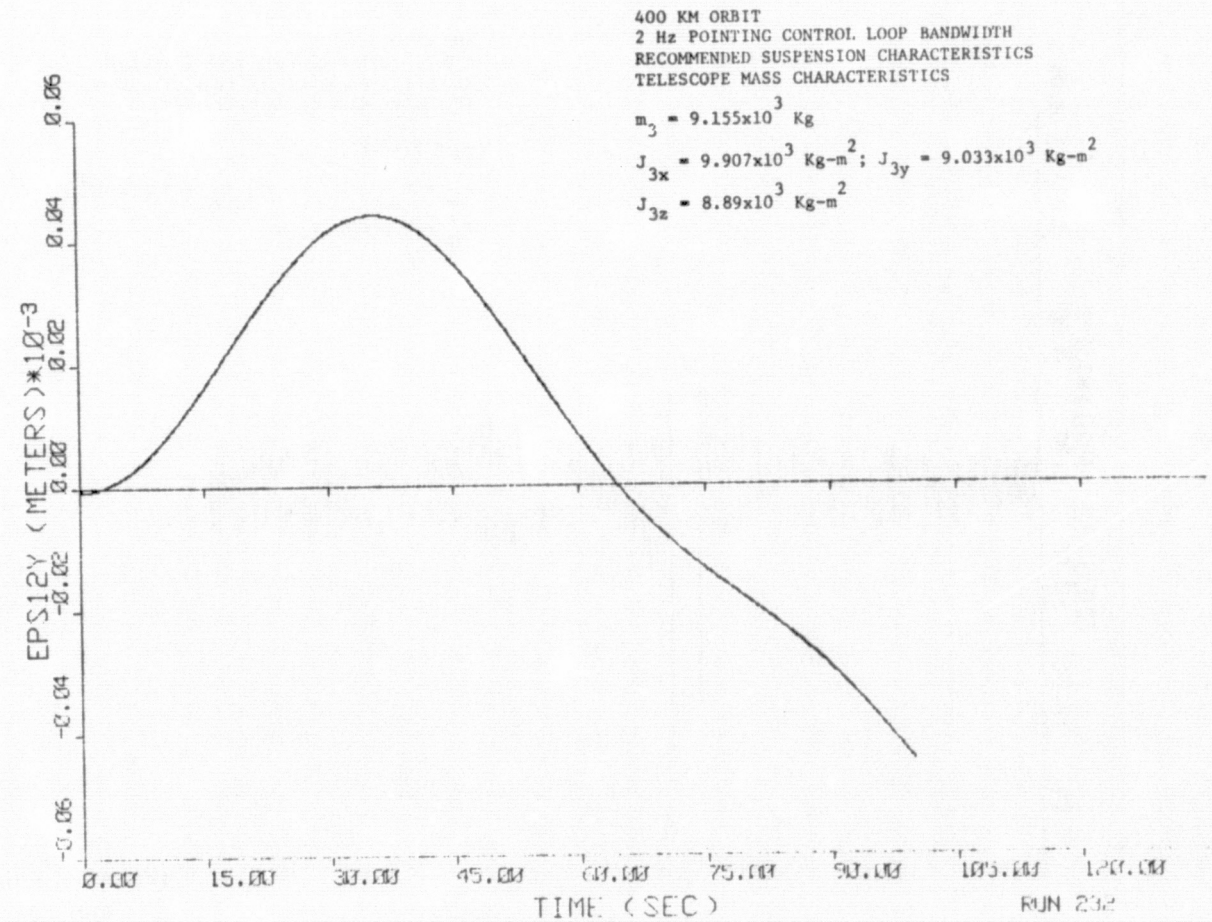


Figure 11-98. Pedestal y-Axis CM Translation

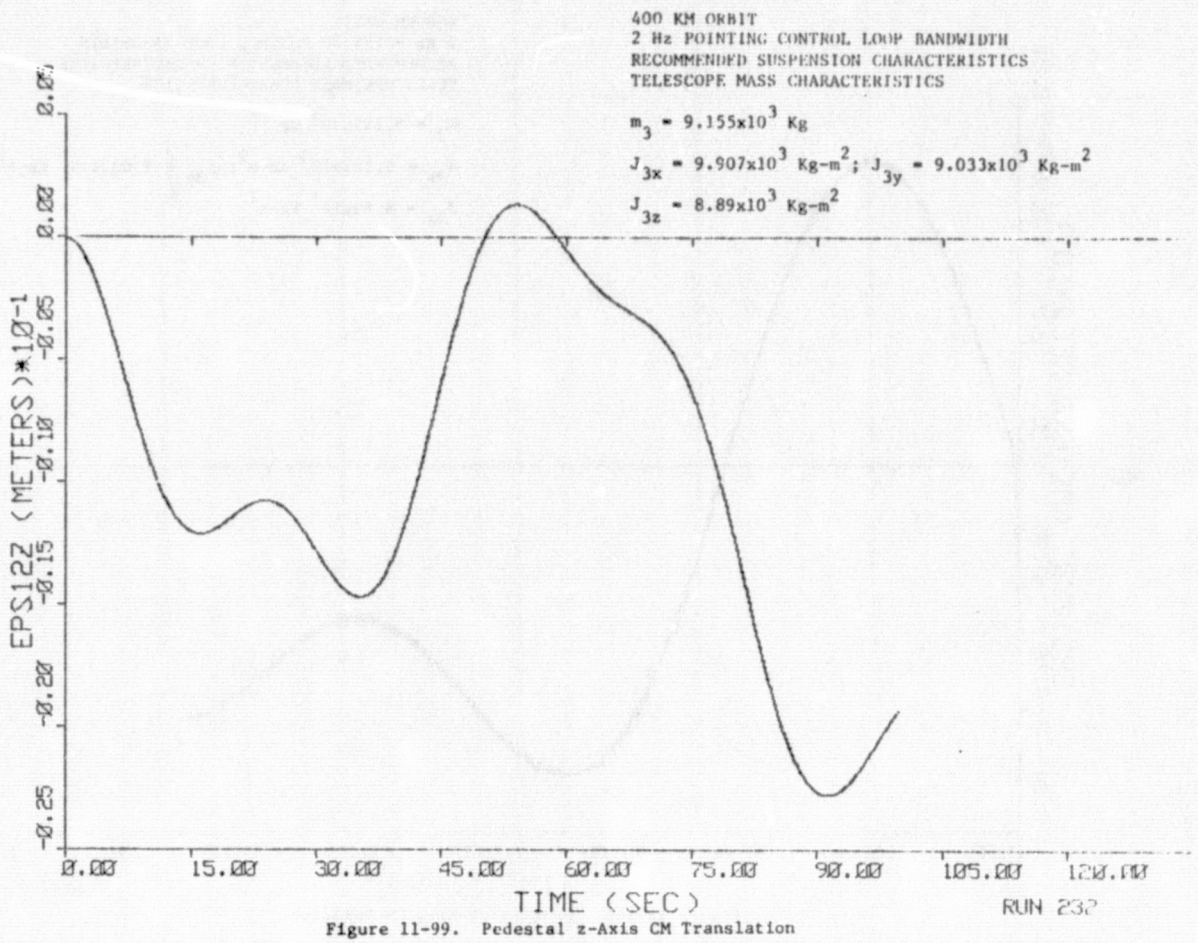


Figure 11-99. Pedestal z-Axis CM Translation

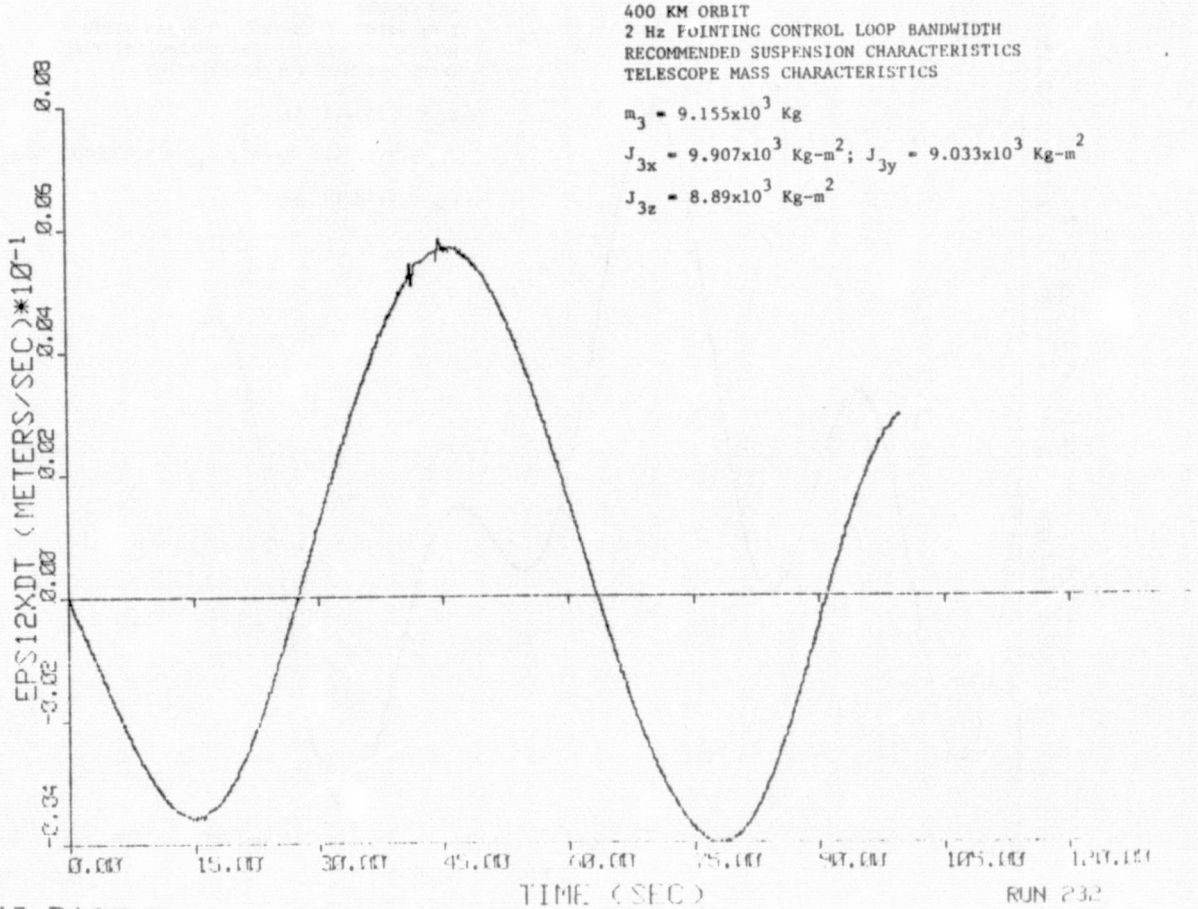


Figure 11-100. Pedestal x-Axis CM Velocity

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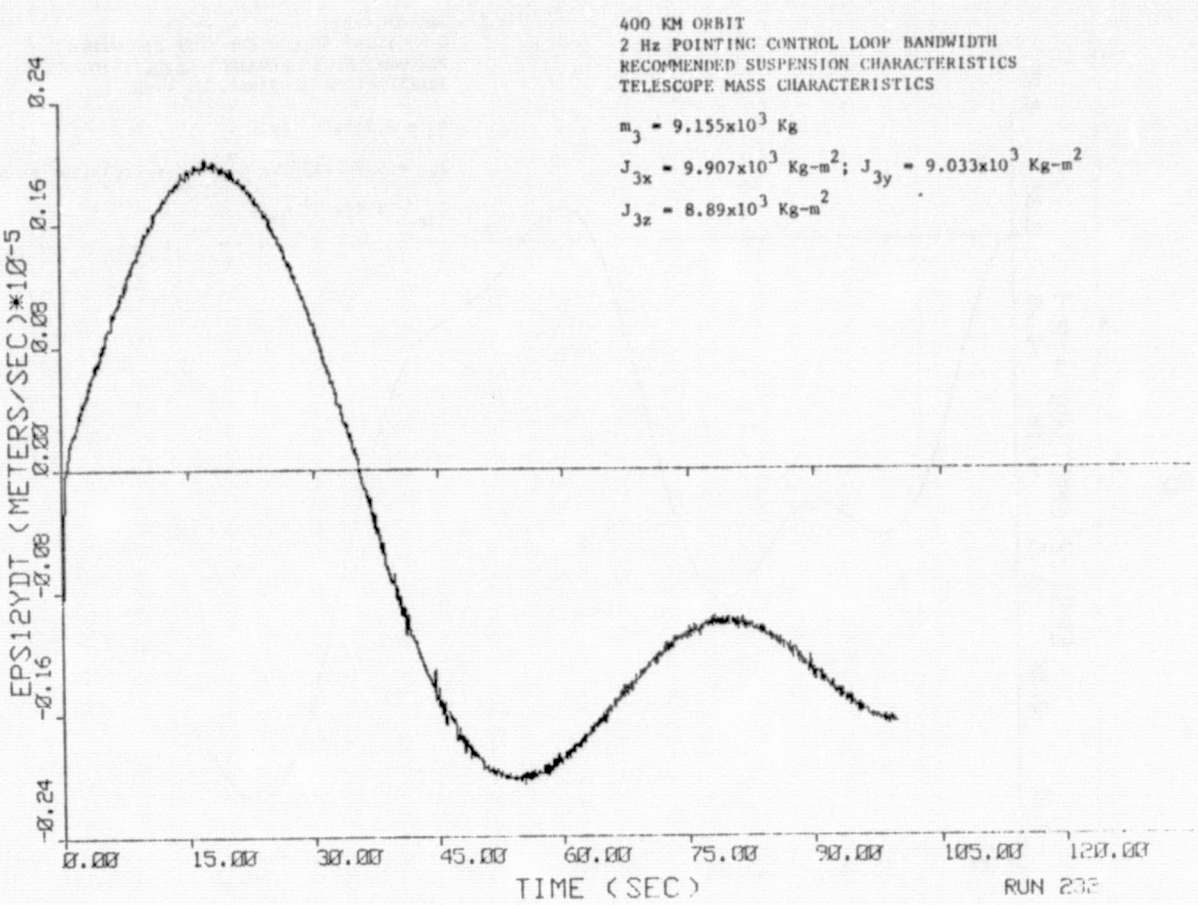


Figure 11-101. Pedestal y-Axis CM Velocity

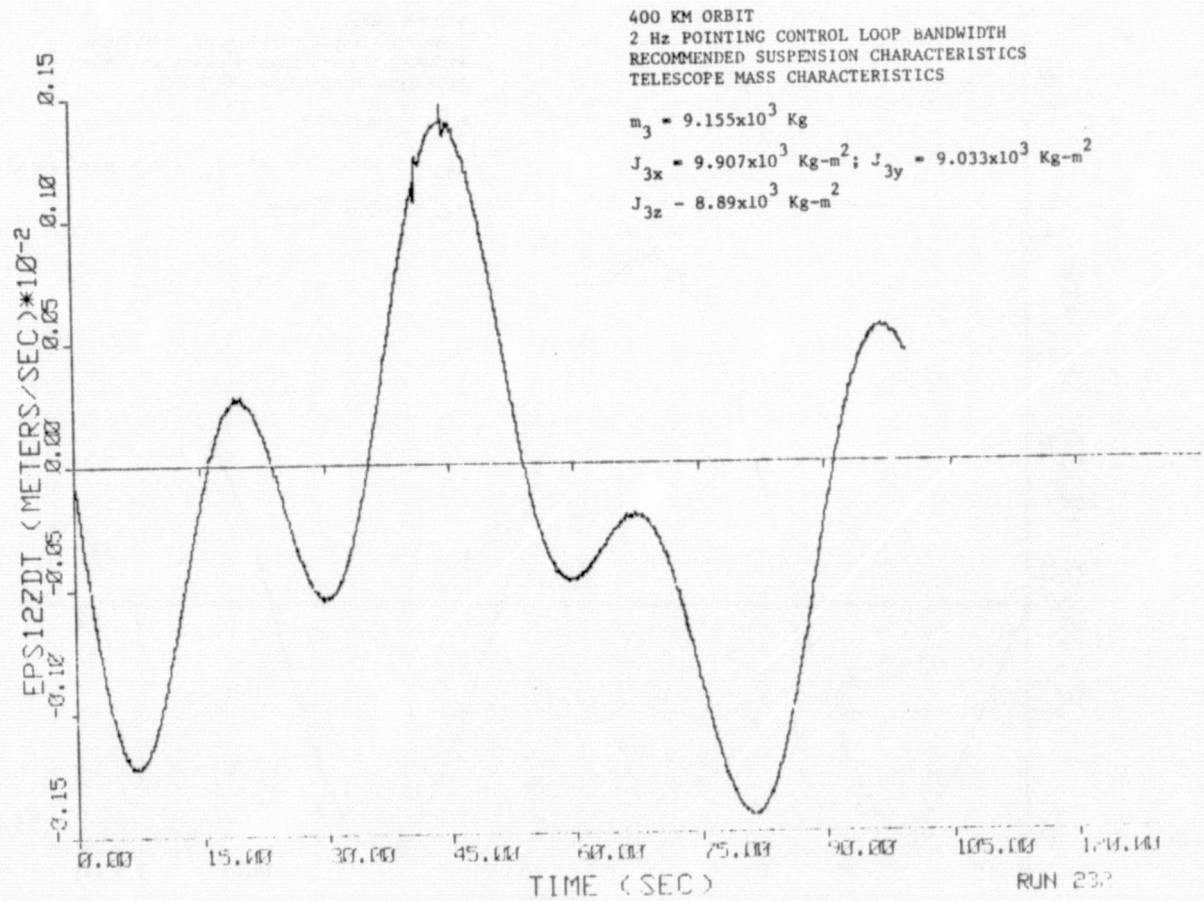


Figure 11-102. Pedestal z-Axis CM Velocity

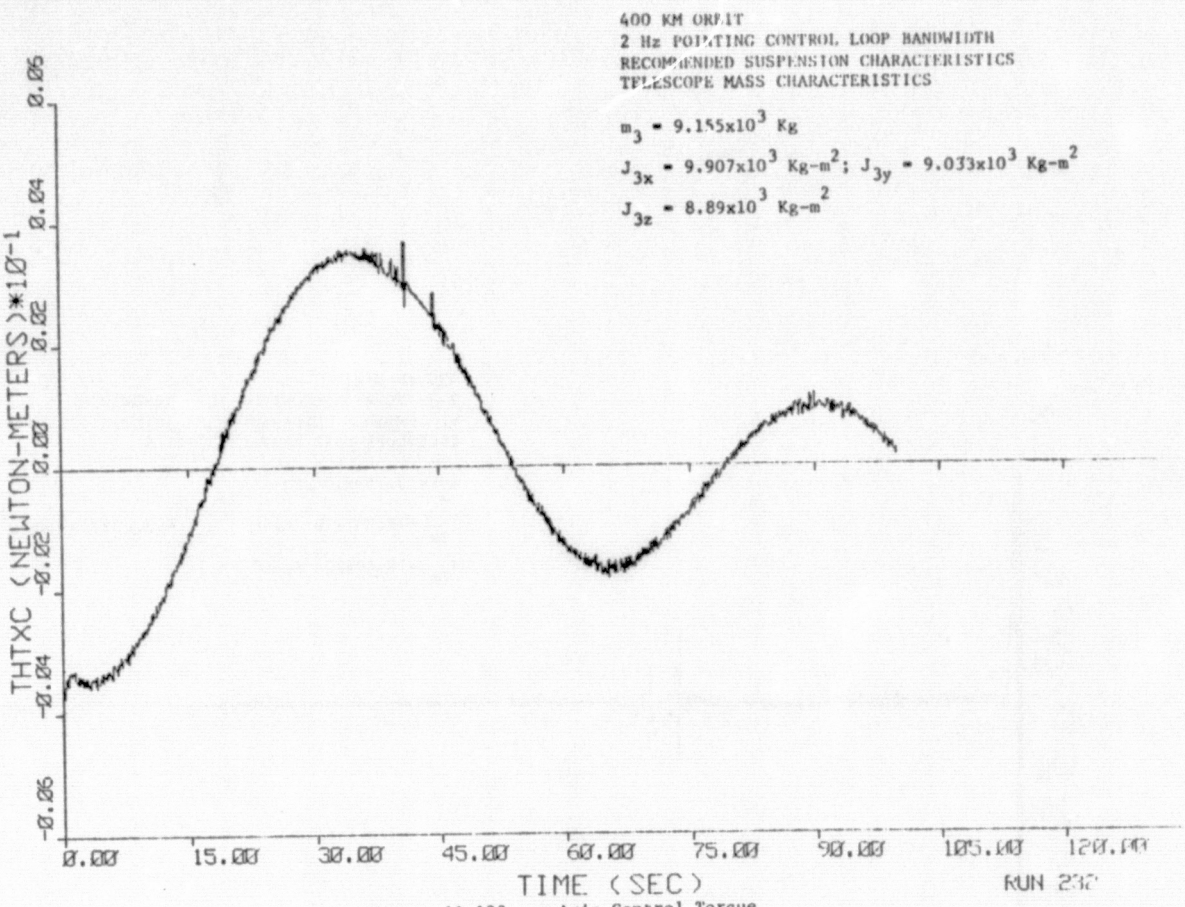


Figure 11-103. x-Axis Control Torque

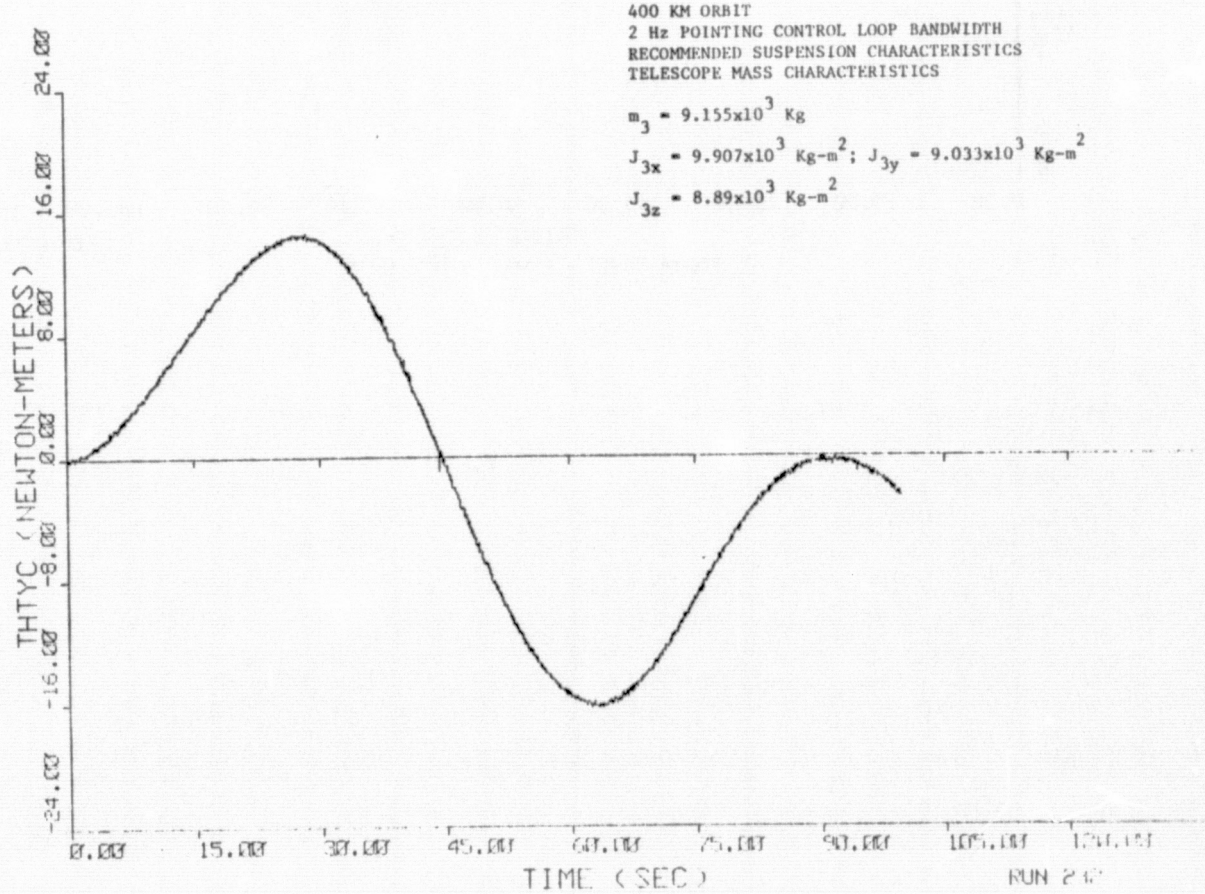


Figure 11-104. y-Axis Control Torque

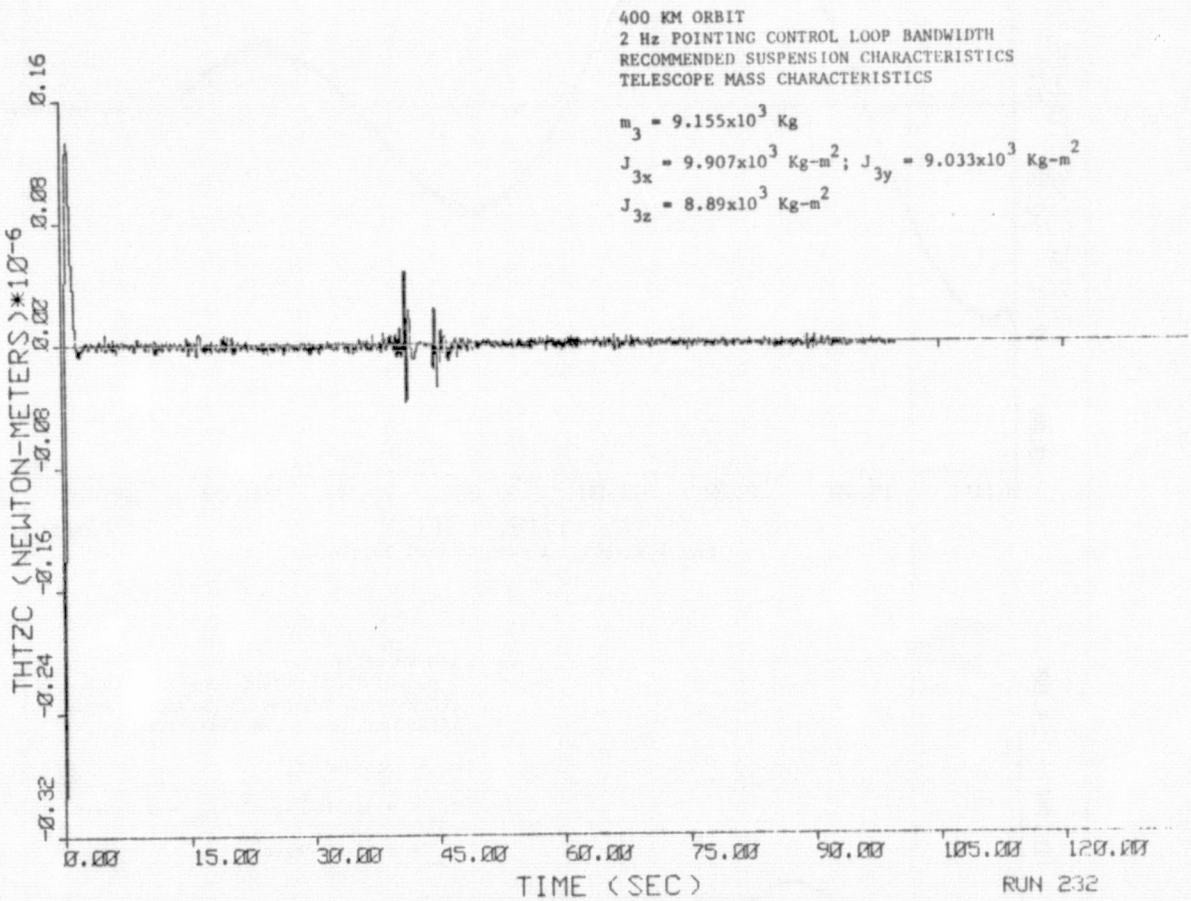


Figure 11-105. z-Axis Control Torque

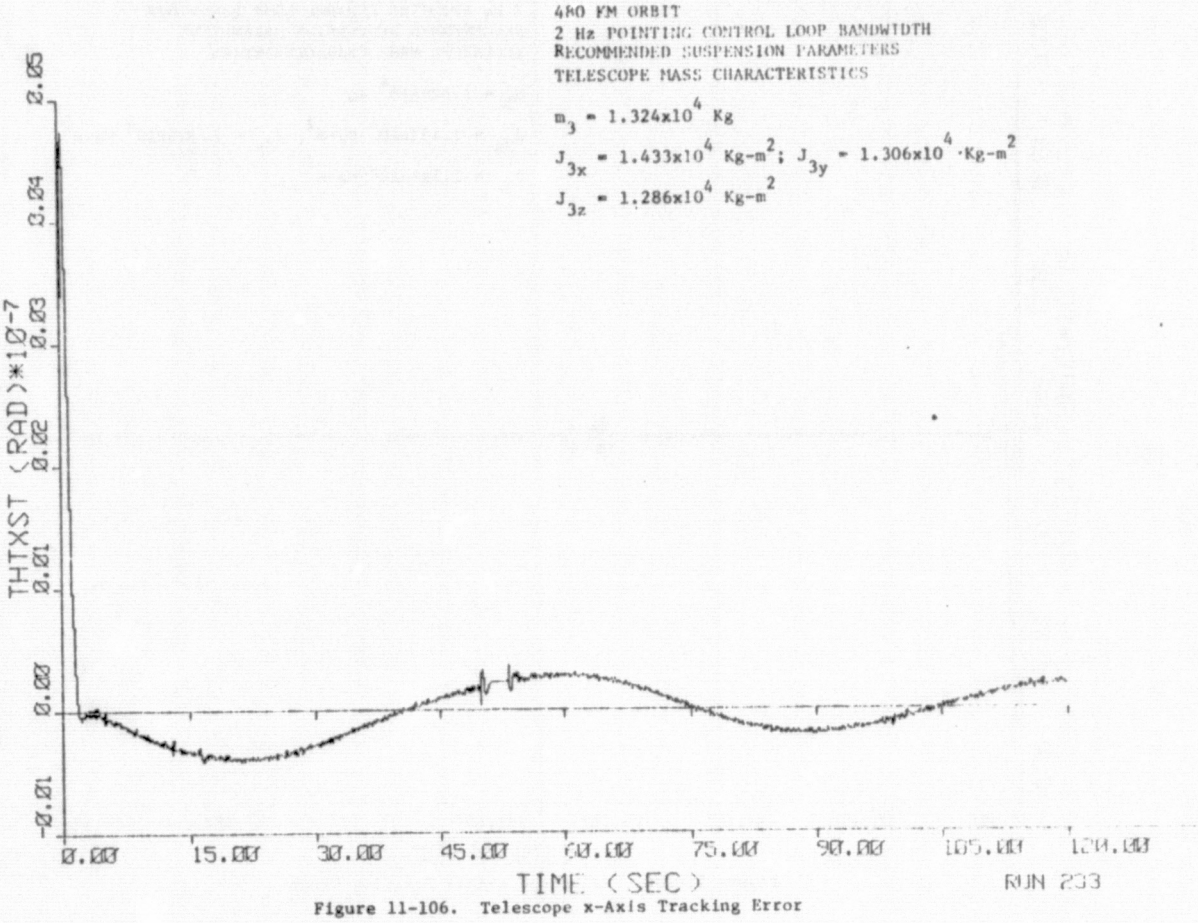


Figure 11-106. Telescope x-Axis Tracking Error

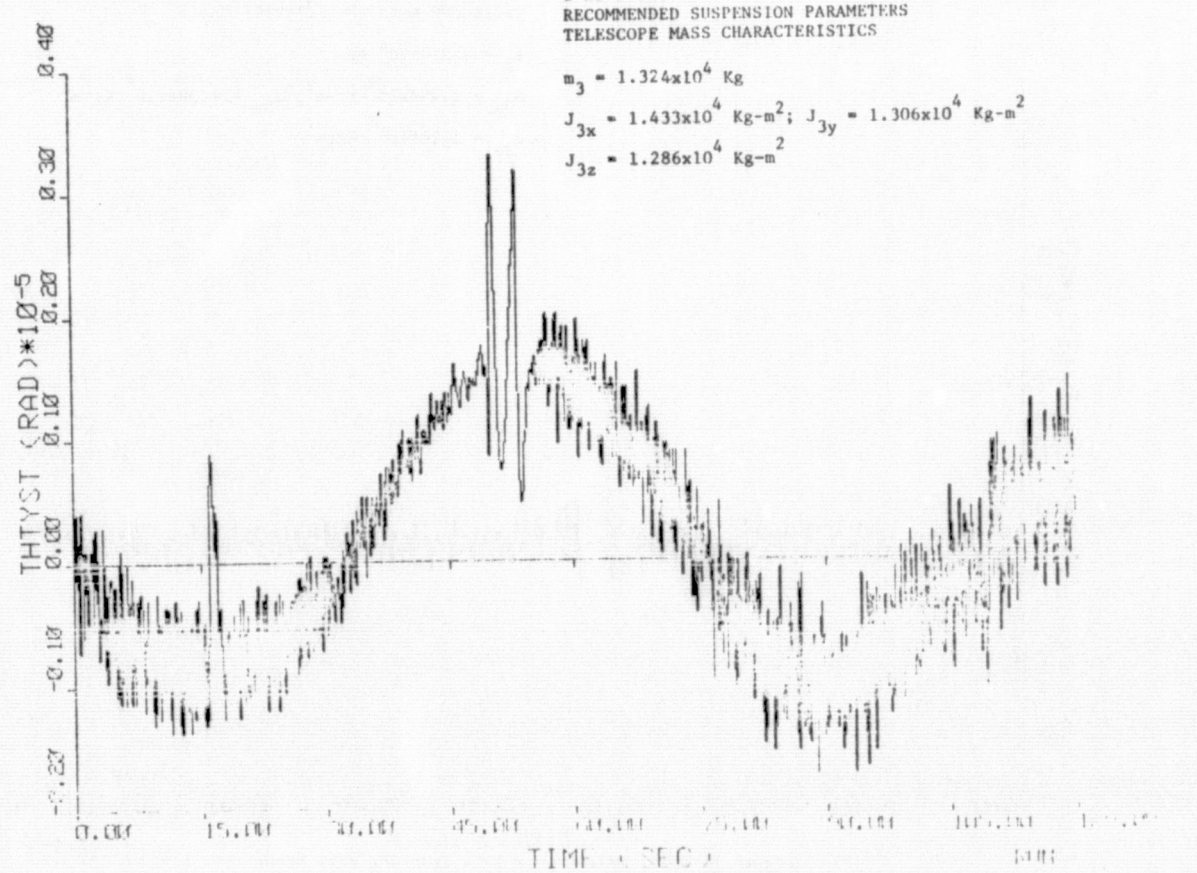


Figure 11-107. Telescope y-Axis Tracking Error

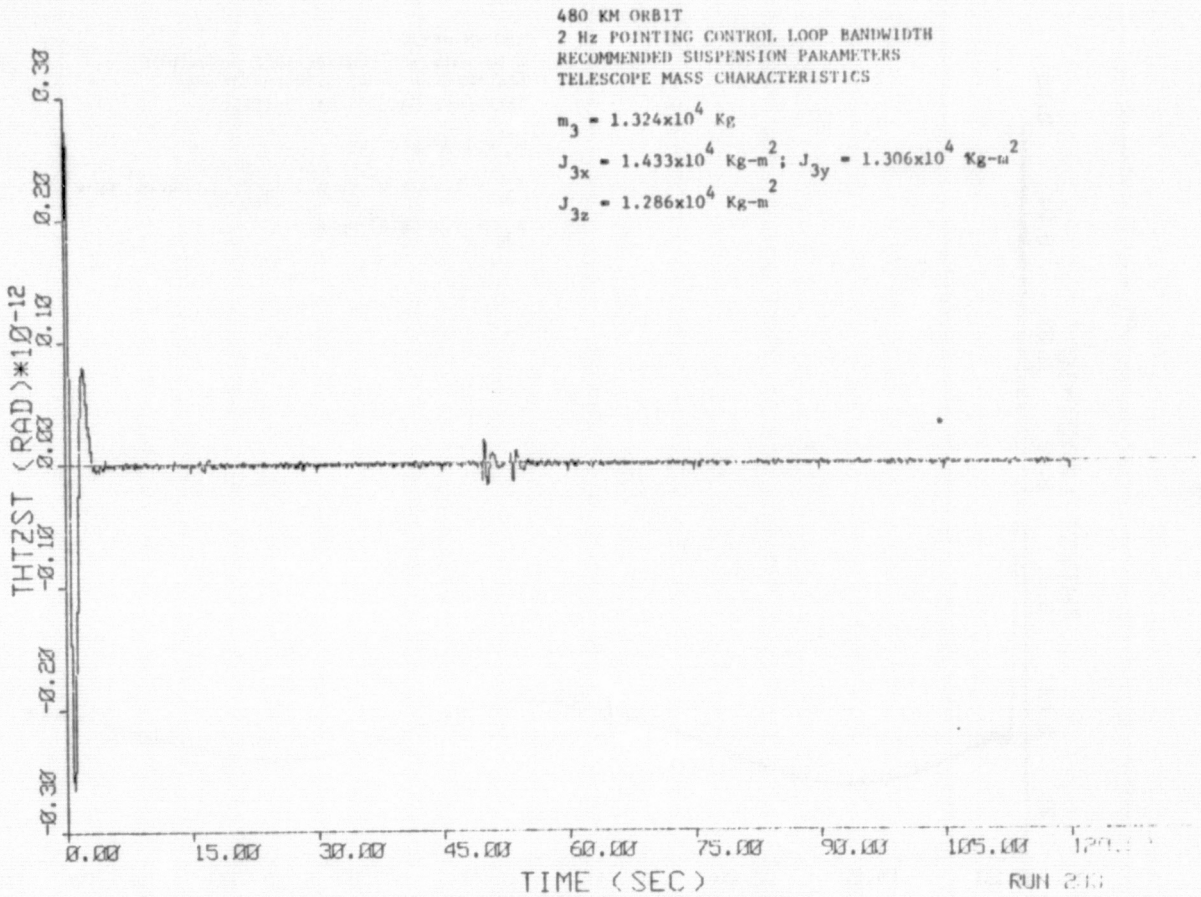


Figure 11-108. Telescope z-Axis Tracking Error

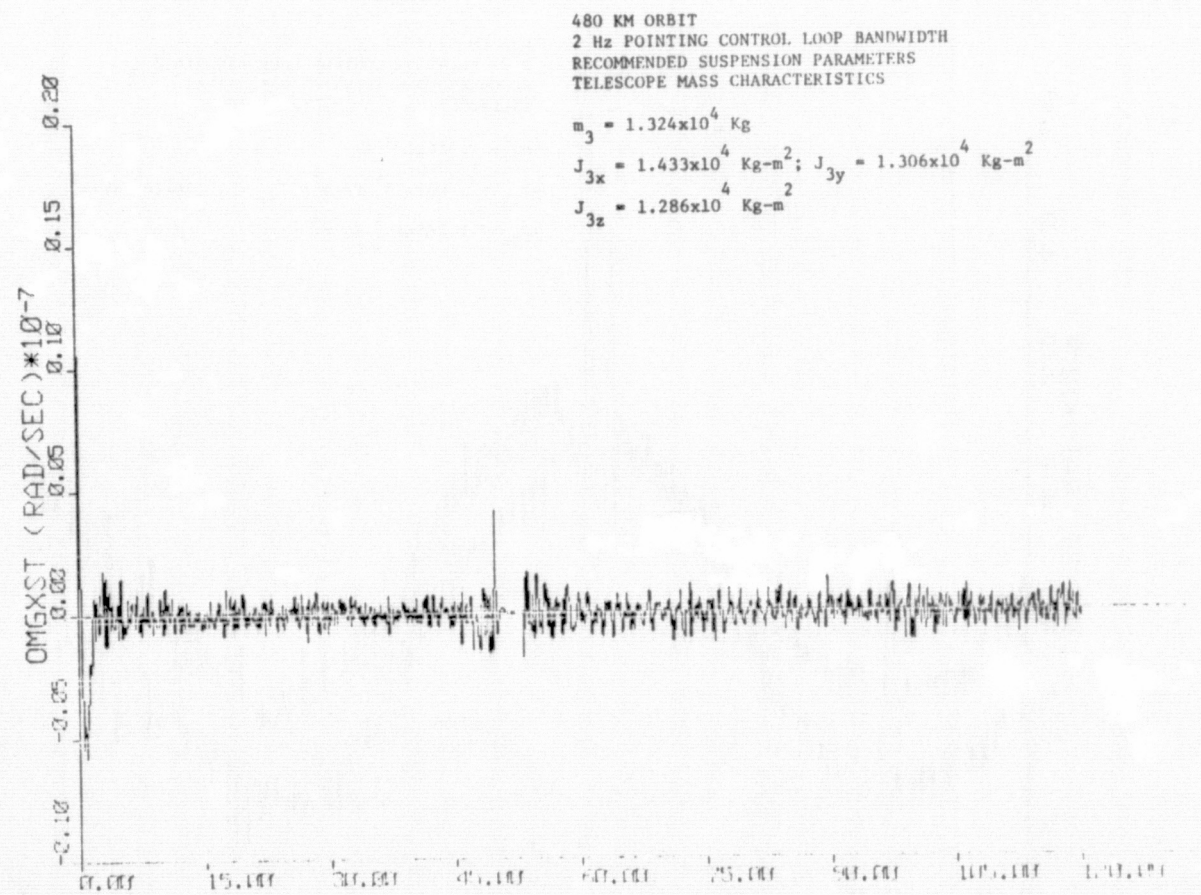


Figure 11-109. Telescope x-Axis Tracking Rate Error

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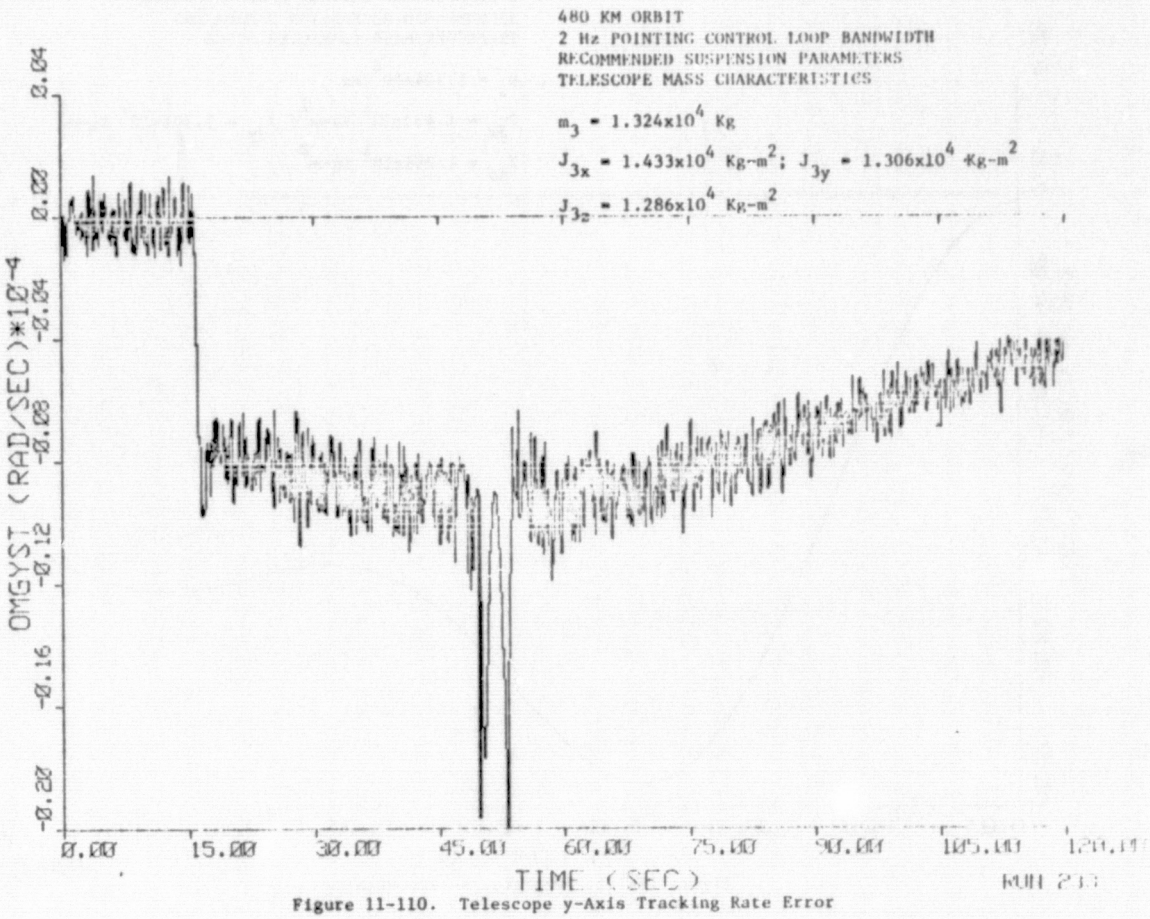


Figure 11-110. Telescope y-Axis Tracking Rate Error

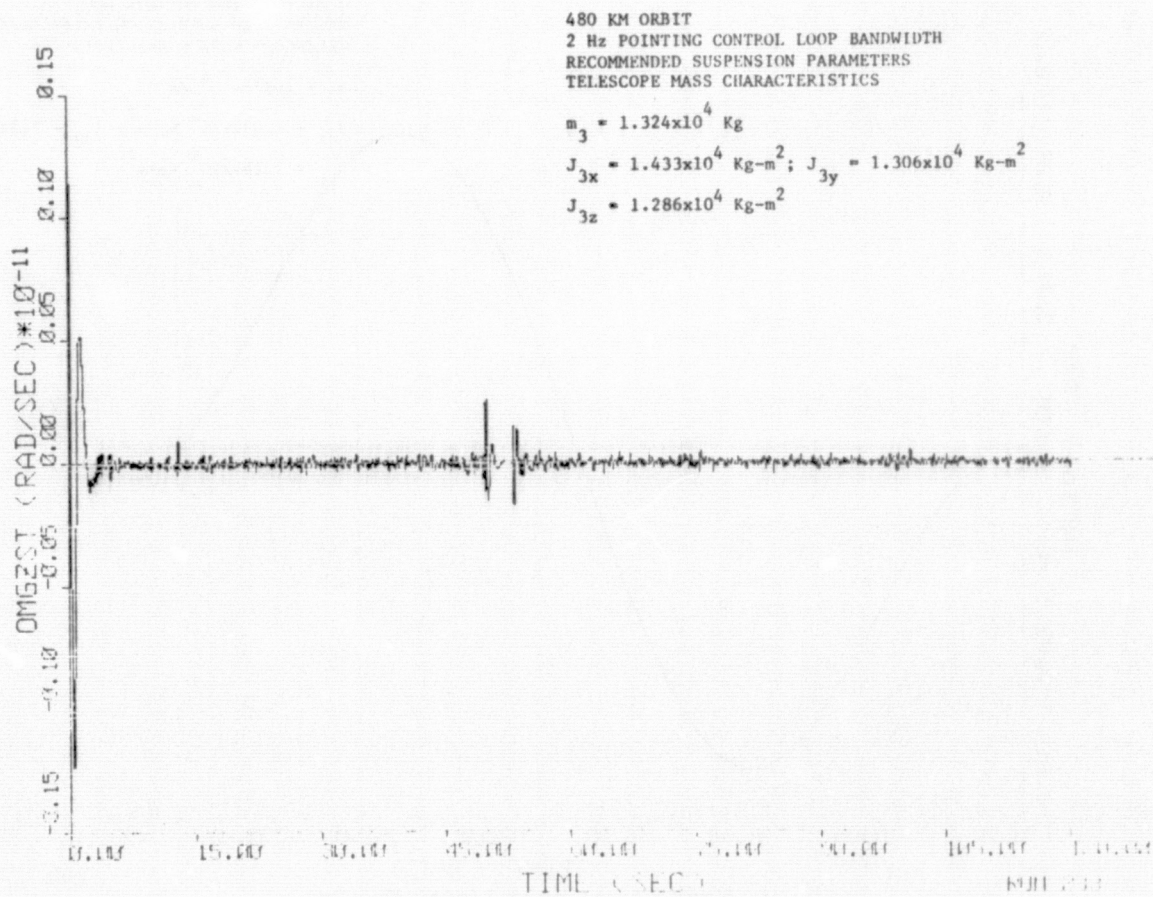


Figure 11-111. Telescope z-Axis Tracking Rate Error

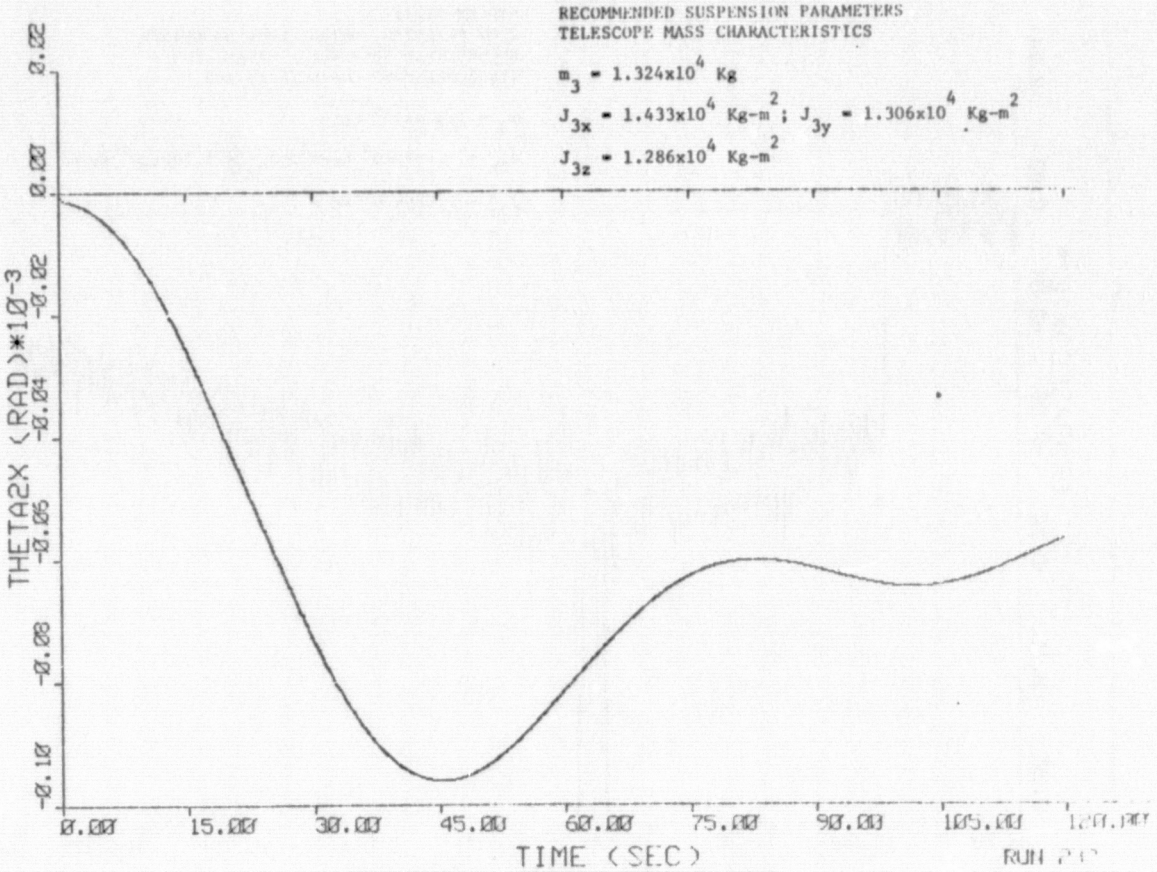


Figure 11-112. Pedestal x-Axis Rotation

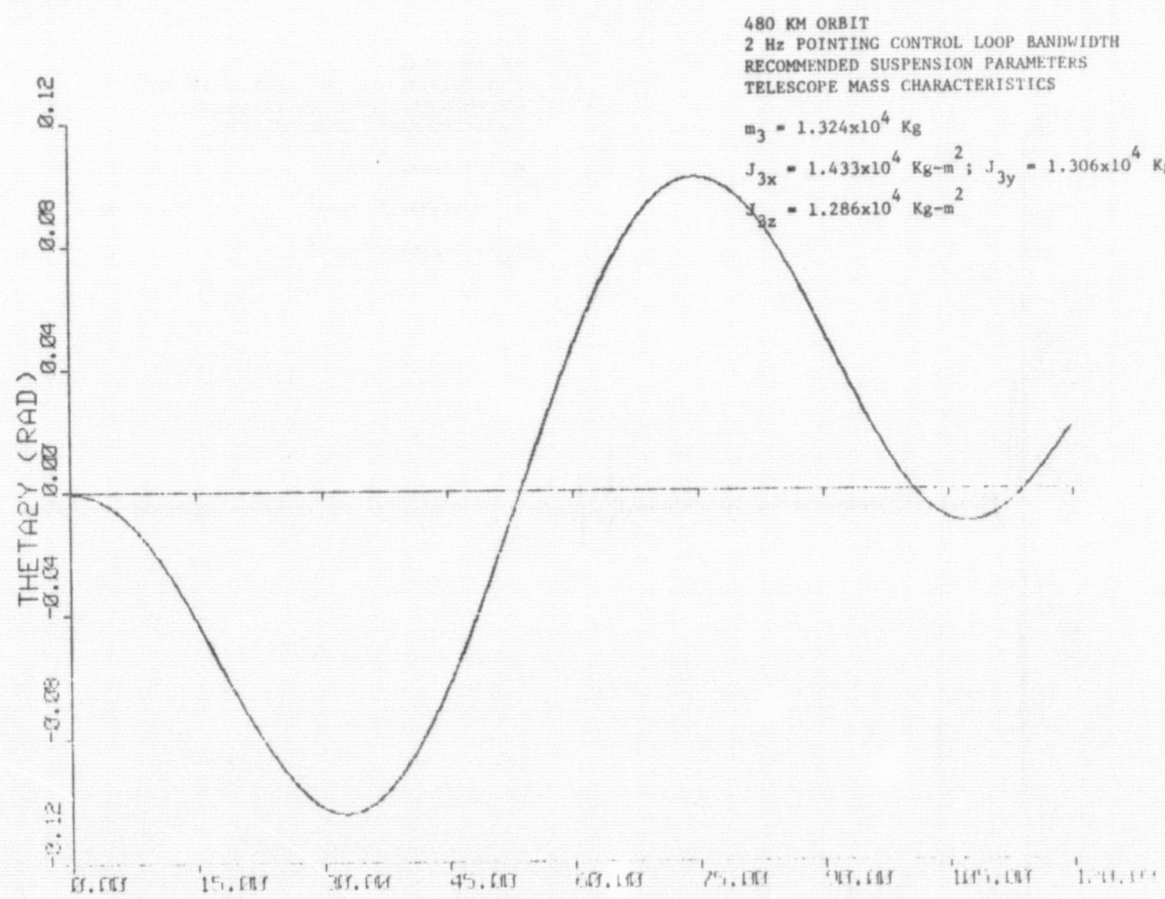


Figure 11-113. Pedestal y-Axis Rotation

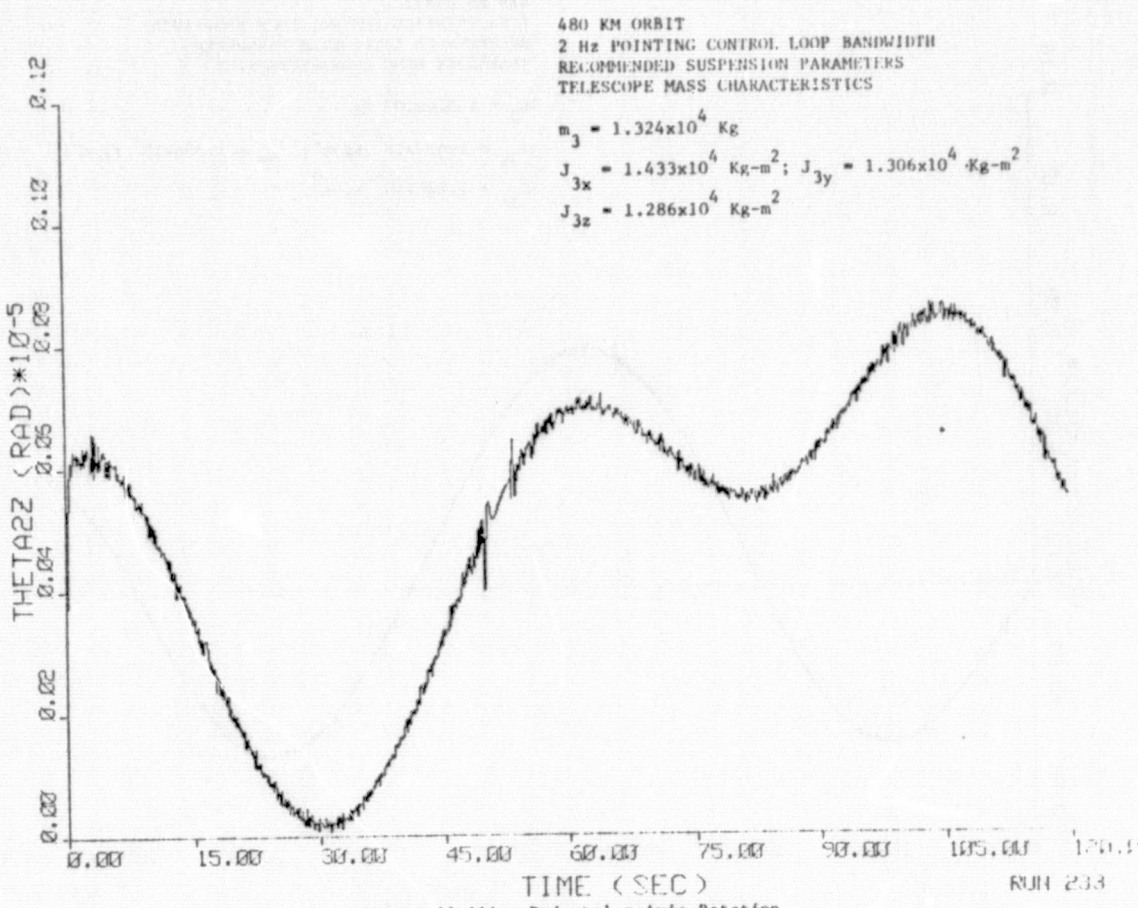


Figure 11-114. Pedestal z-Axis Rotation

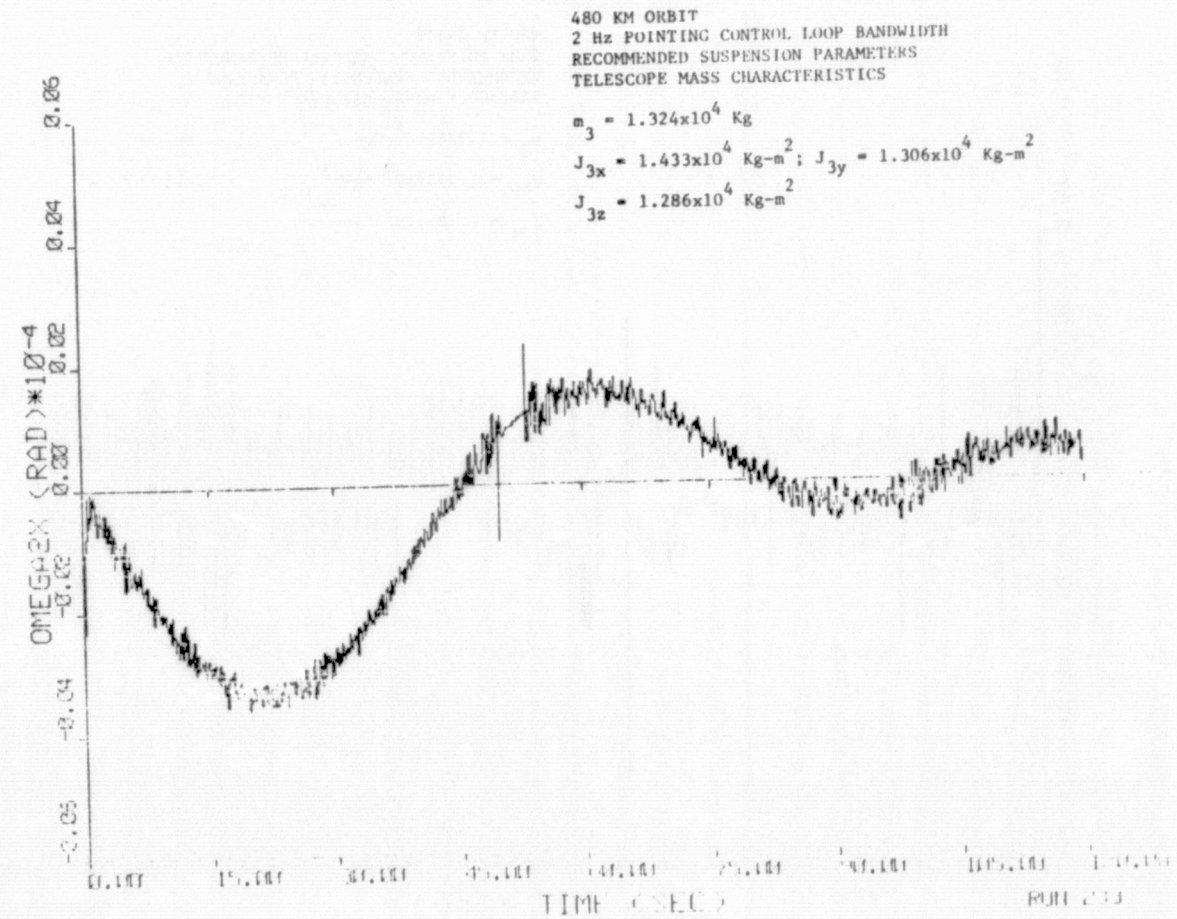


Figure 11-115. Pedestal x-Axis Rate

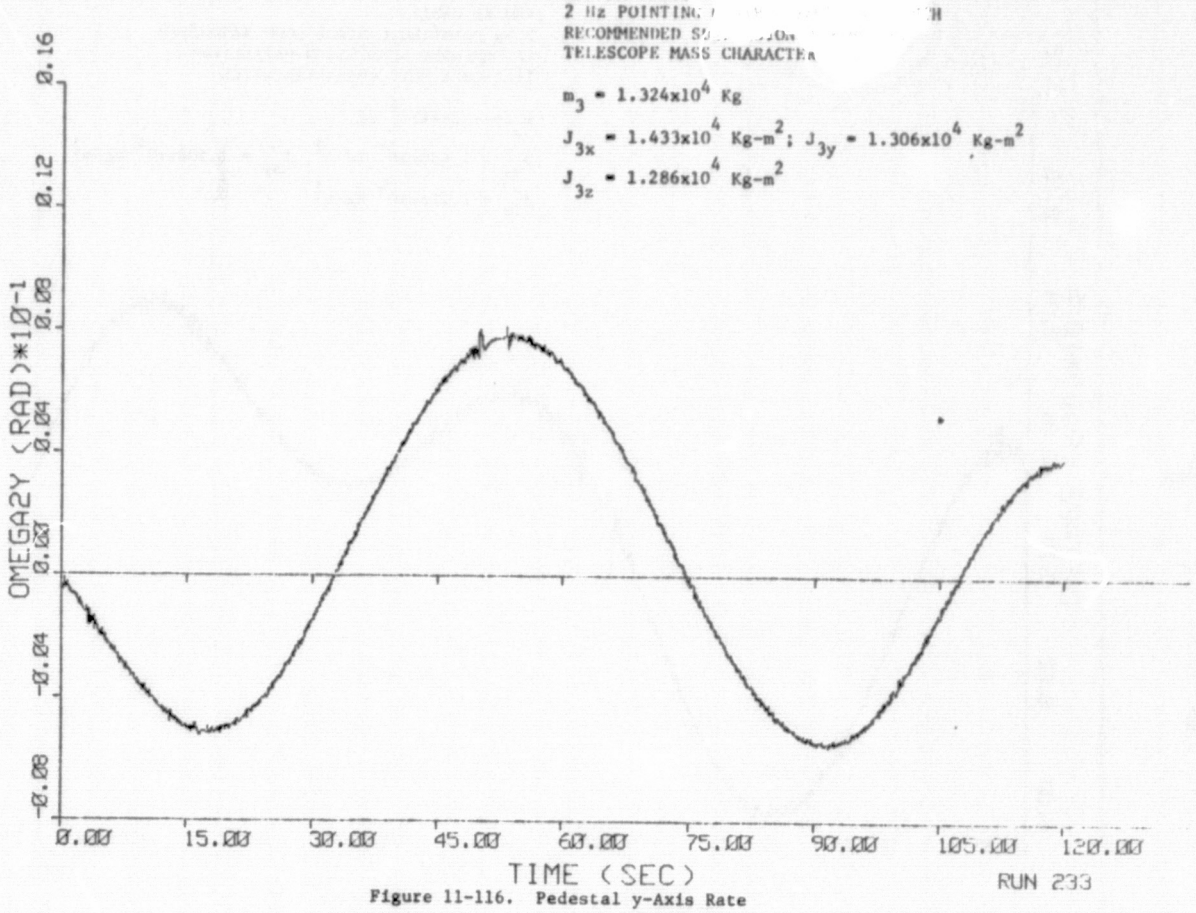


Figure 11-116. Pedestal y-Axis Rate

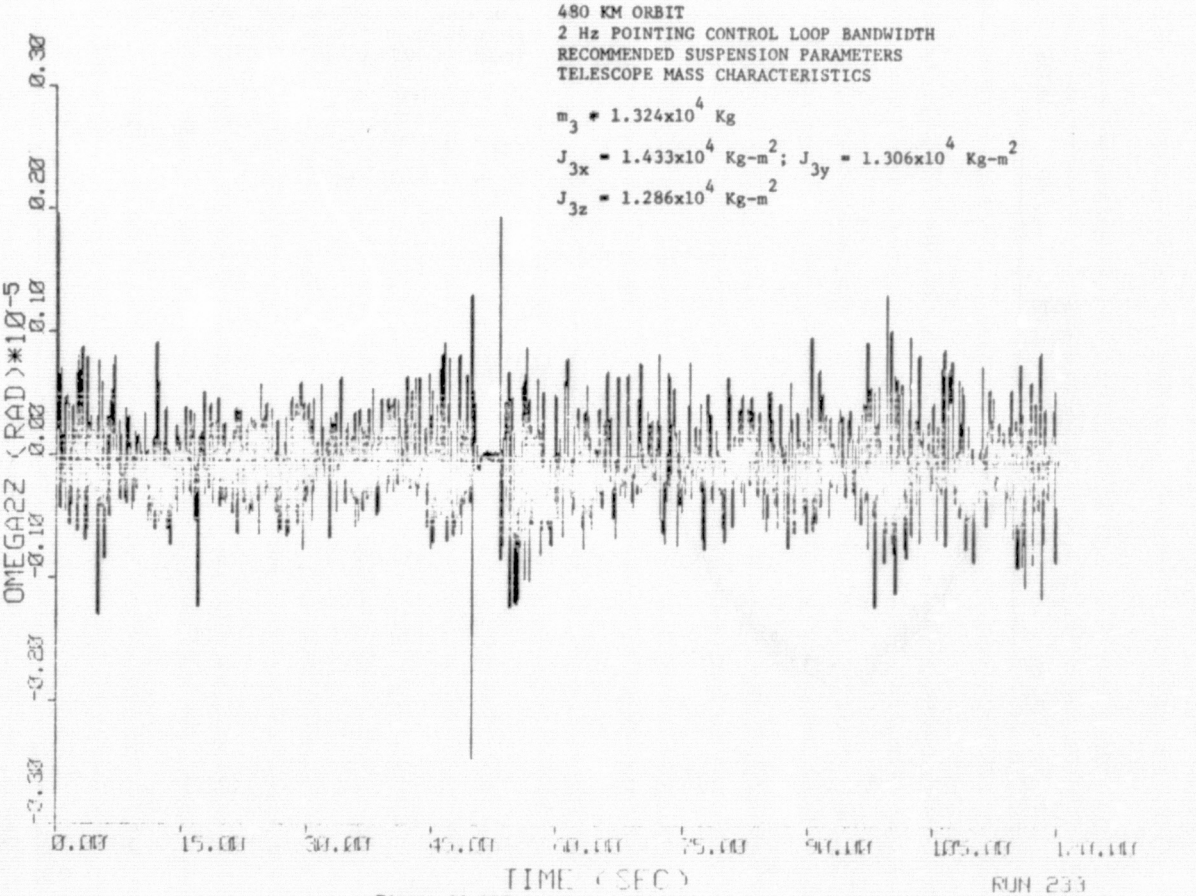


Figure 11-117. Pedestal z-Axis Rate

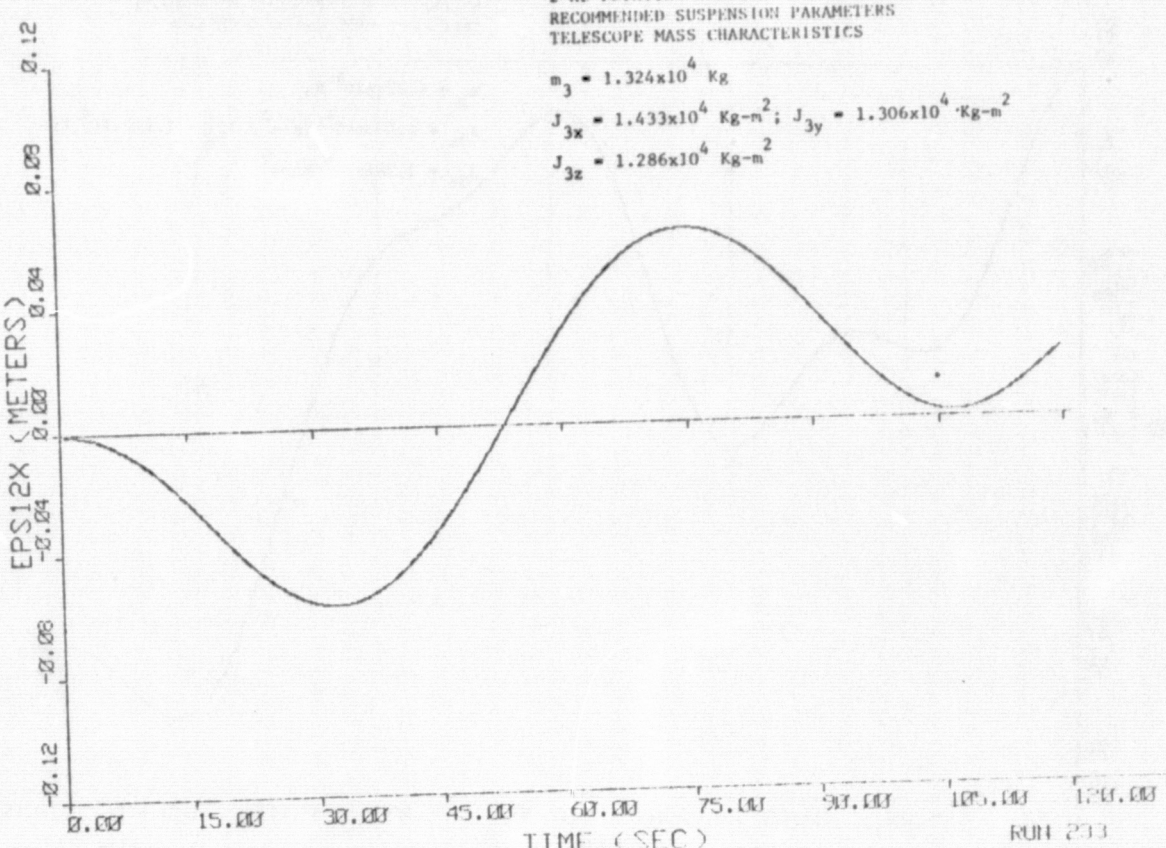


Figure 11-118. Pedestal x-Axis CM Translation

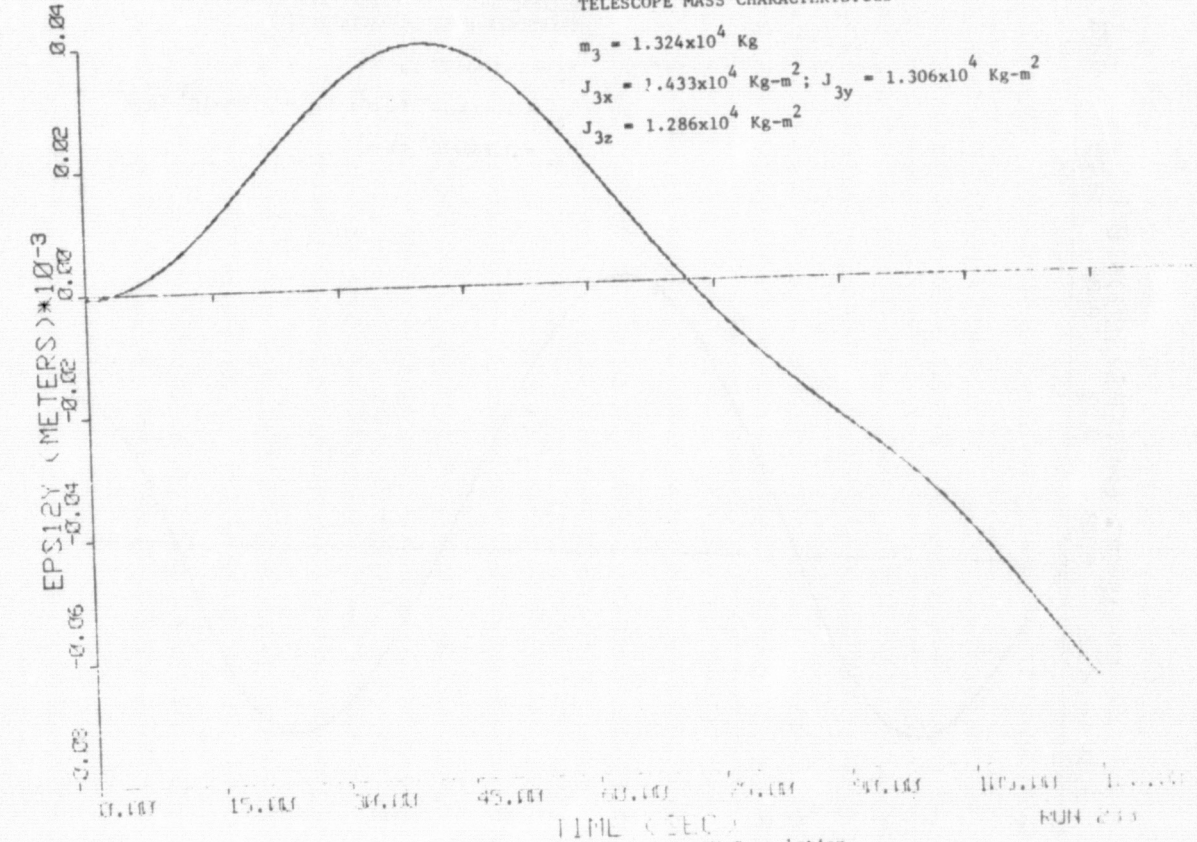


Figure 11-119. Pedestal y-Axis CM Translation

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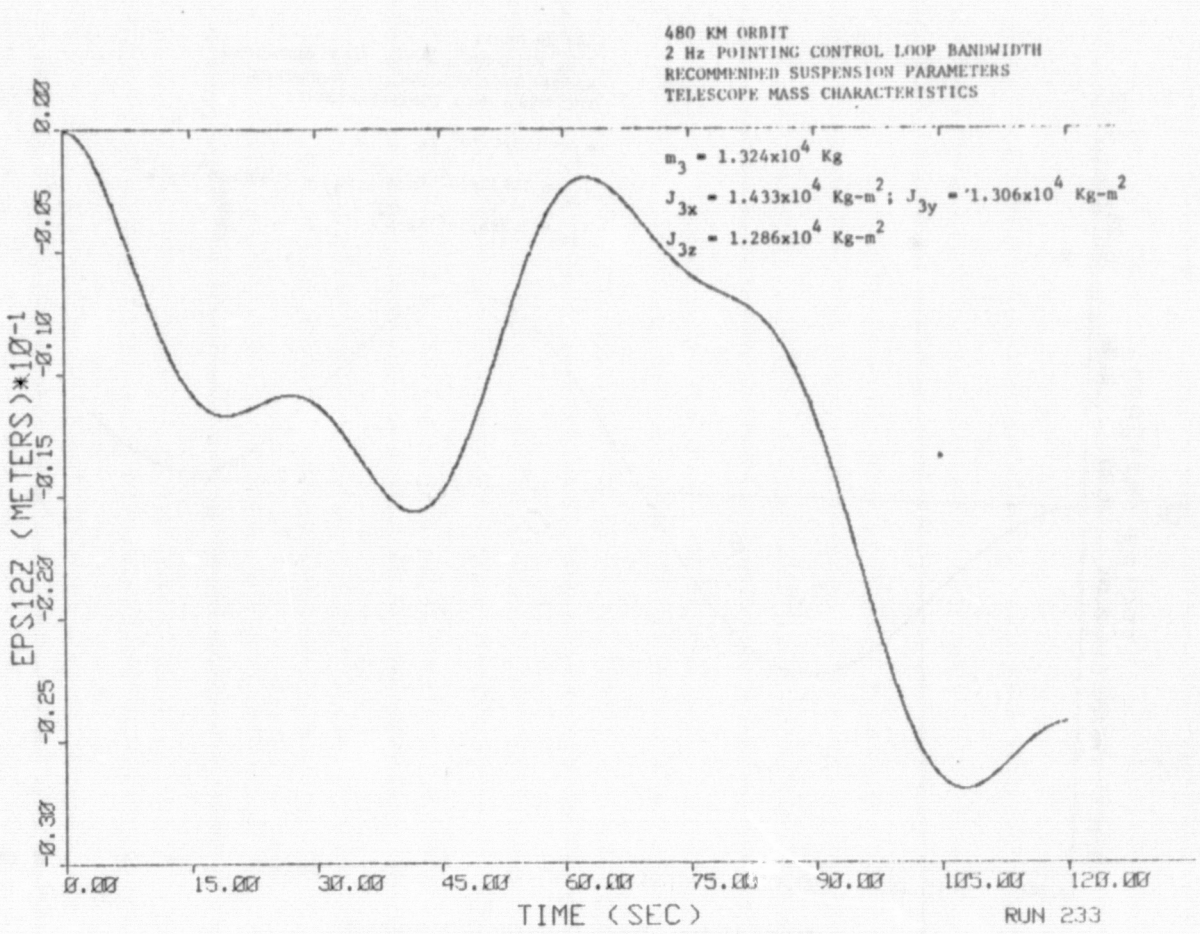


Figure 11-120. Pedestal z-Axis CM Translation

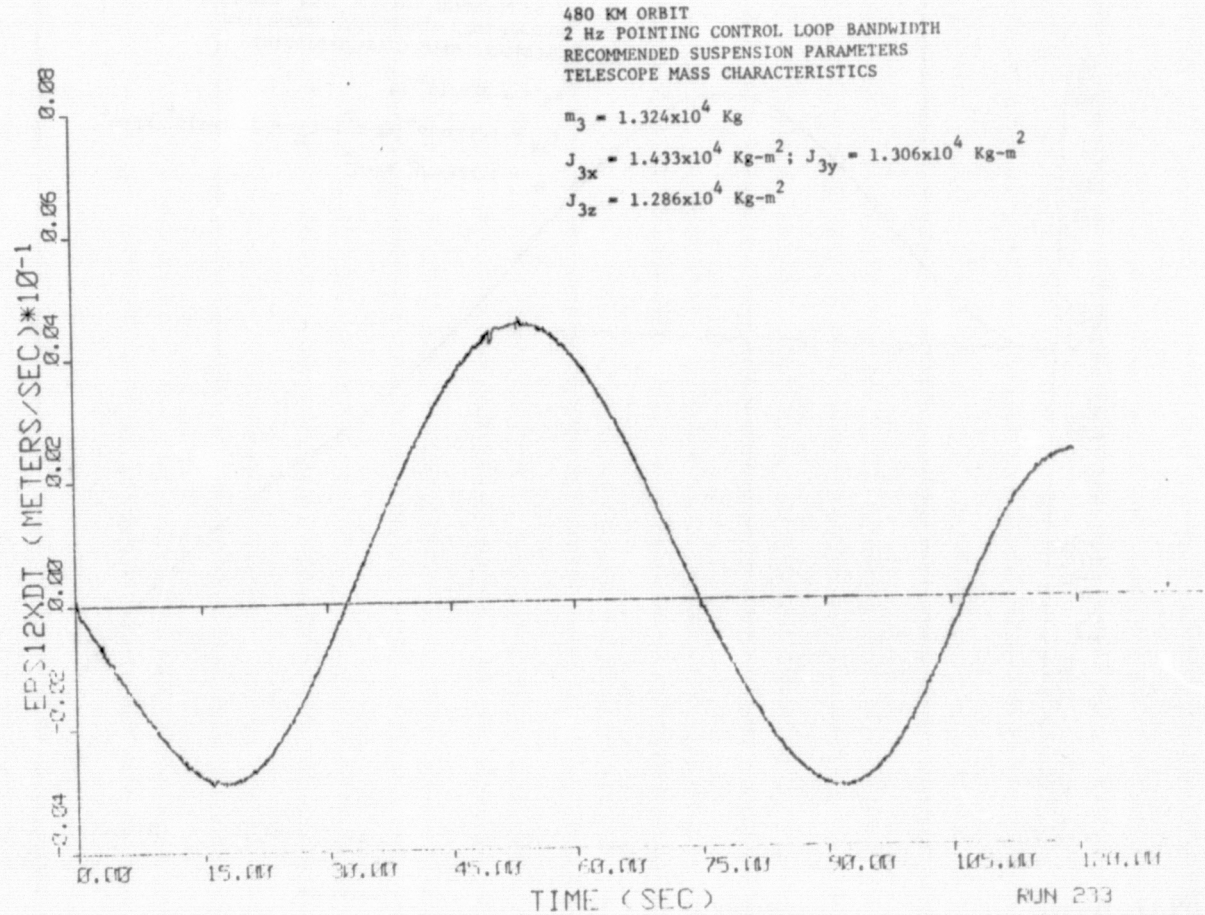


Figure 11-121. Pedestal x-Axis CM Velocity

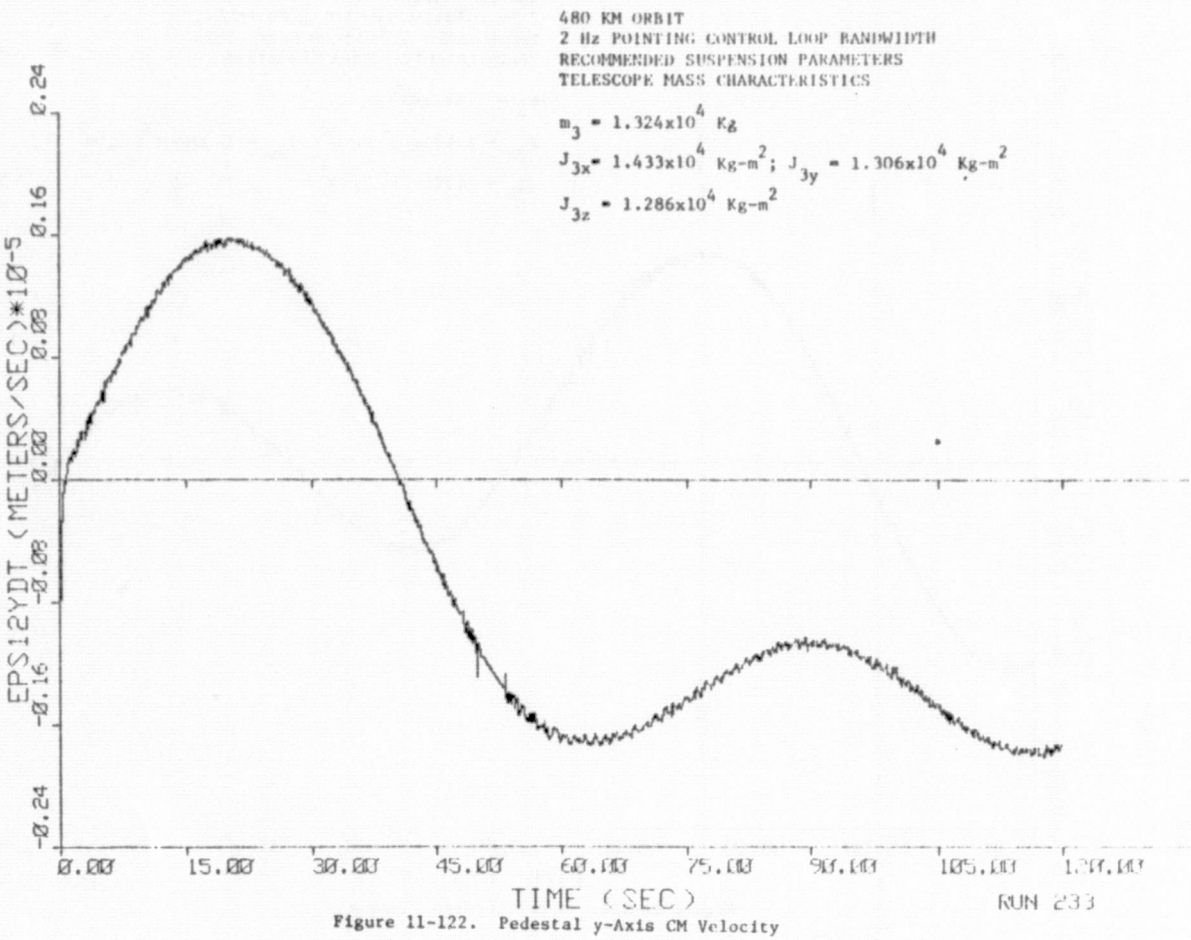


Figure 11-122. Pedestal y-Axis CM Velocity

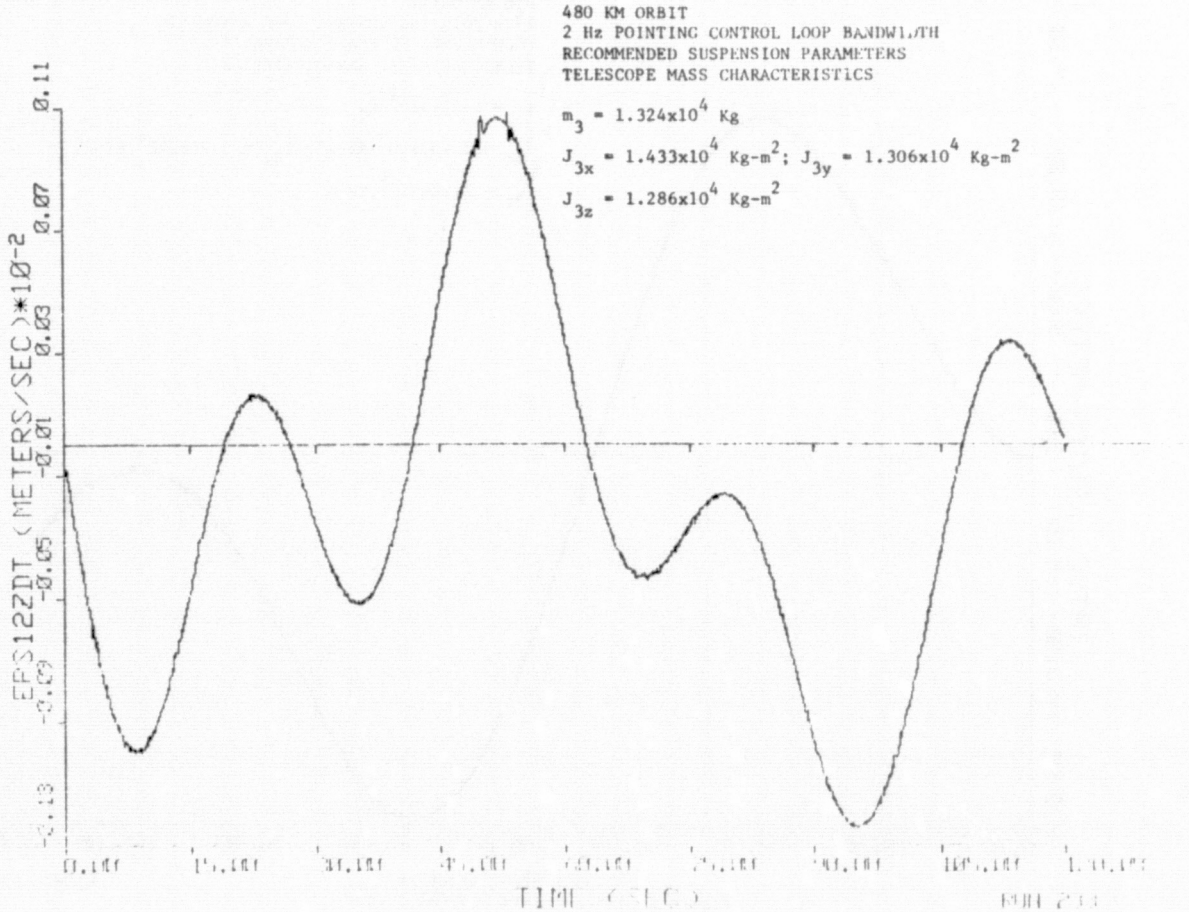


Figure 11-123. Pedestal z-Axis CM Velocity

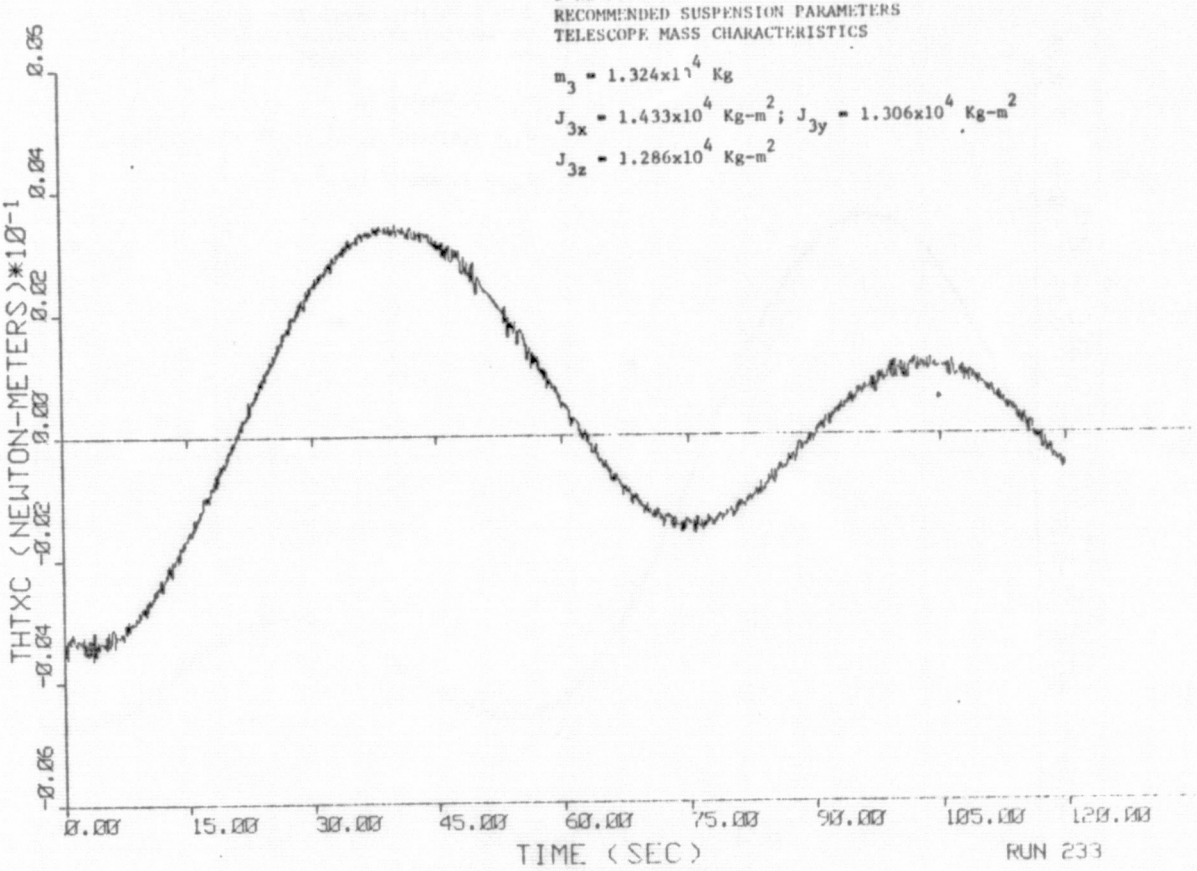


Figure 11-124. x-Axis Control Torque

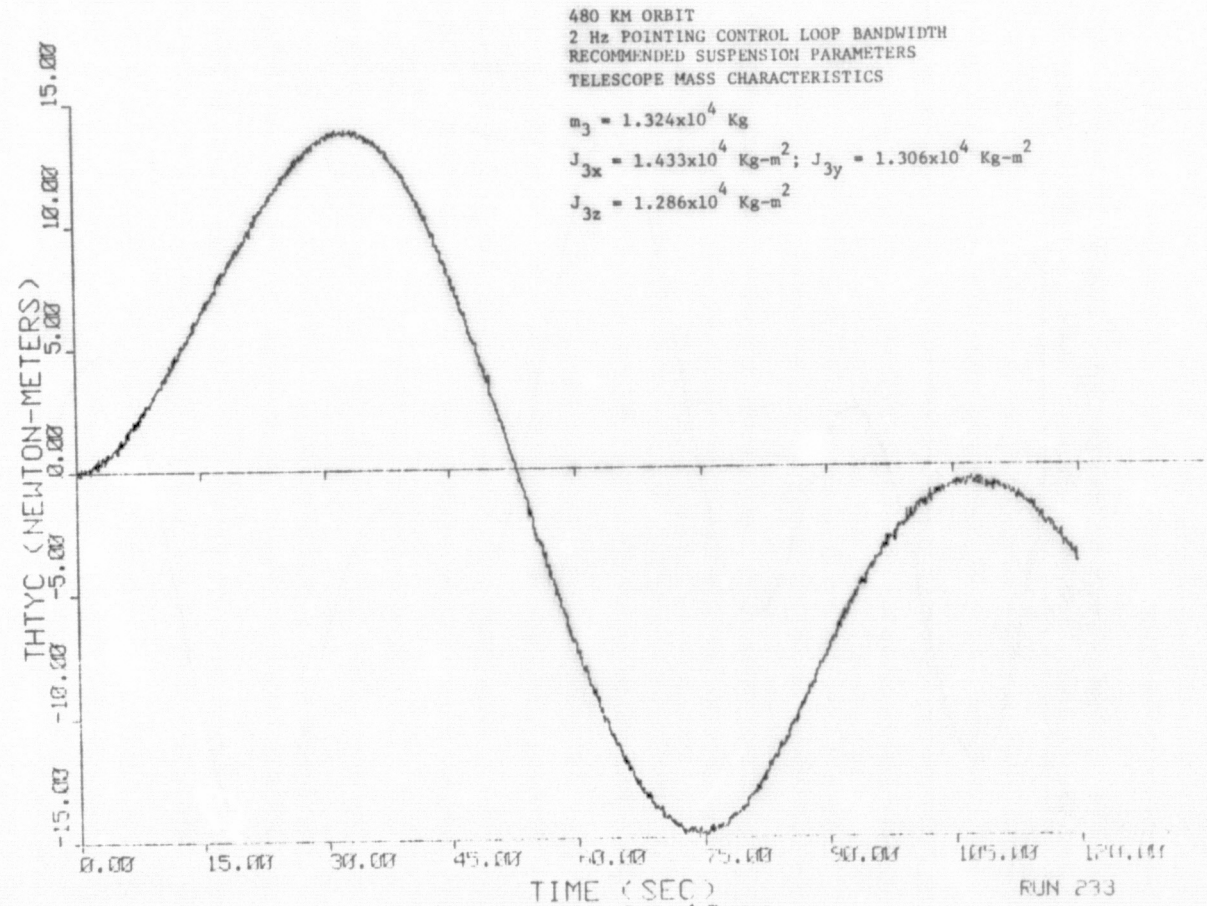


Figure 11-125. y-Axis Control Torque

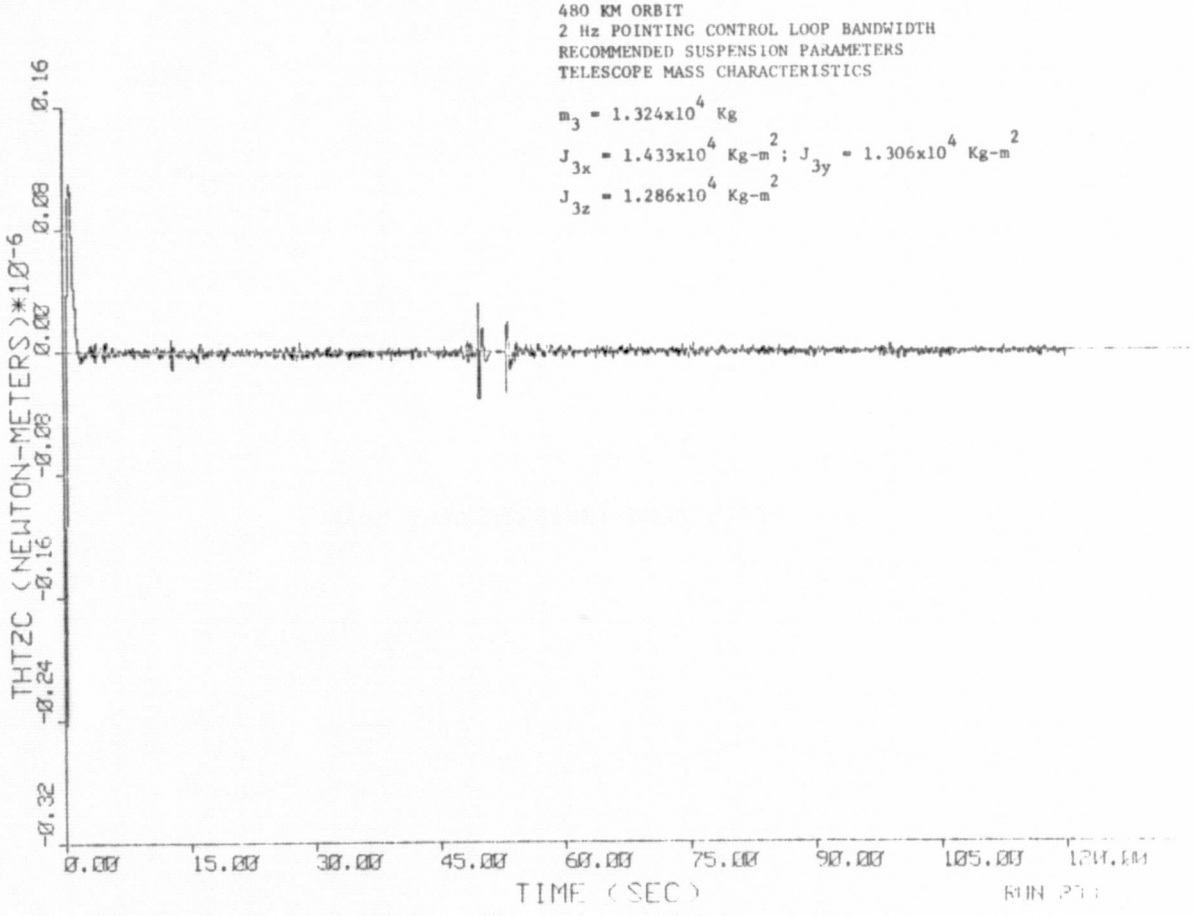


Figure 11-126. z-Axis Control Torque

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